

VOLUME XIII
No. 11

GOVERNMENT OF NORTHERN IRELAND
MINISTRY OF AGRICULTURE

MONTHLY REPORT

MARCH, 1939.



PRINTED UNDER THE AUTHORITY OF HIS MAJESTY'S STATIONERY OFFICE
BY BELL & LOGAN, LTD., BELFAST

GOVERNMENT OF NORTHERN IRELAND
MINISTRY OF AGRICULTURE

MONTHLY REPORT

March, 1939

VOLUME XIII

No. 11

CONTENTS

	PAGE
AGRICULTURAL CONDITIONS:—	
THE CROPS, SUPPLIES AND PRICES	653
LIVE STOCK	655
THE COST OF LIVING INDEX FIGURE	657
THE MARKETS DURING FEBRUARY	657
TABLE OF EGG PRICES: NORTHERN IRELAND	658
TABLE OF EGG PRICES: LONDON	659
EXTENT AND PRODUCE OF THE FLAX CROP IN 1938	659
LIVE STOCK CENSUS, 1st JANUARY, 1939	660
EXTENT AND PRODUCE OF POTATOES, TURNIPS AND MANGELS IN 1938	661
ARTICLES:—	
The New Agricultural Index Number (Part II)	662
New Light on the Risk of Breeding from Pullets	677
Pigs Marketing Board: Official Statement	679
MARKETING SCHEMES:—	
Agricultural Marketing (Pig Industry) Act (N.I.), 1934:—	
PIG PRICES FOR MARCH, 1939	682
GRADING STATISTICS	684
COST OF STANDARD PIG RATION	685
The Cattle Industry (Emergency Provisions) Acts, 1934 and 1935, and The Livestock Industry Act, 1937:—	
SUMMARY OF PAYMENTS	686
NUMBERS CERTIFIED FOR SUBSIDY	686
AVERAGE PRICES PER LIVE CWT. OF CERTIFIED CATTLE	687

AGRICULTURAL NOTES:—

SEASONAL FARM NOTES	...	...	...	...	...	...	688
SEASONAL LIVESTOCK NOTES	...	...	...	...	...	...	692
SEASONAL GARDEN AND ORCHARD NOTES	...	...	...	...	...	...	694
SEASONAL POULTRY-KEEPING NOTES	...	...	...	...	...	...	695
SEEDS MIXTURES FOR HAY AND PASTURE	...	...	...	...	...	...	697

ANNOUNCEMENTS AND REMINDERS:—

GENERAL	...	...	...	...	...	...	700
SCHOLARSHIPS IN CREAMERY MANAGEMENT	...	...	...	...	...	...	702
LOANS FOR SPRAYING MATERIALS	...	...	...	...	...	...	703
APPLE ORCHARD SPRAYING PROGRAMME	...	...	...	...	...	...	704
SEVENTEENTH EGG-LAYING TEST AT STORMONT	...	...	...	...	...	...	705

AGRICULTURAL PRICES:—

FEEDING STUFFS AT SPECIFIED CENTRES	...	...	...	...	...	...	709
FEEDING STUFFS (WITH CALCULATED VALUES OF PROTEIN AND STARCH EQUIVALENTS)	...	...	...	...	...	...	710
FERTILISERS AT SPECIFIED CENTRES	...	...	...	...	...	...	715
TRADE AND PRICES OF LIVESTOCK AT BELFAST AUCTION MARTS—							
FAT STOCK	...	...	...	...	...	...	717
OTHER STOCK	...	...	...	...	...	...	718
LIVE STOCK AT FAIRS	...	...	...	...	...	...	719

AGRICULTURAL TRADE RETURNS:—

SHIPMENTS OF LIVE STOCK FROM NORTHERN IRELAND PORTS	...	...	...	...	...	720
IMPORTS AND EXPORTS OF AGRICULTURAL PRODUCTS	...	...	...	...	...	721
ACCOUNT OF TRADE AT FAIRS	...	...	...	...	...	721
NUMBERS OF CATTLE AT FAIRS	...	...	...	...	...	722

MINISTRY OF AGRICULTURE

MONTHLY REPORT

MARCH, 1939.

With the weather continuing somewhat unsettled, field work is not making that progress necessary to overtake arrears, so that spring cultivations may be done in reasonably good time. The heavy rains of late will, unfortunately, further delay the work of preparing the ground for the reception of seed, especially in the heavy clay soils on which ploughing has not, generally speaking, yet commenced. The milder temperatures and the drying winds now prevailing should, however, prove beneficial; already there are signs of spring in the fresher appearance of pastures, which is particularly welcome in those farms where stocks of home-grown fodder are likely to run short of requirements.

While it is difficult as yet to make even a rough estimate of the extent of the acreage likely to be taken up by the various crops this season, it seems reasonably safe to predict that an increased area will be sown under flax, having regard to all the circumstances attending such a general decision. Grain crops also may be grown on a larger scale subject, of course, to weather conditions permitting.

As promised in the February issue, the series of agricultural indices is continued in this report by the inclusion of the individual and composite annual index numbers of prices of agricultural commodities, together with the monthly index numbers of the various crops.

AGRICULTURAL CONDITIONS.

AGRICULTURAL CONDITIONS AT 1st MARCH, 1939.

Weather conditions during February, while by no means ideal for seasonal farm work, showed a considerable improvement on the previous winter months. There were numerous bright intervals during the period of drier weather of the first three weeks of the month, and except for occasional cold spells temperatures were fairly mild for the time of year. Towards the end of the third week, however, wintry weather returned, and until the end of the month temperatures were low. Much rain and sleet fell during the last week, and there were a few showers of hail.

The drier weather brought about a marked improvement in ground conditions and permitted considerable progress to be made with ploughing in most districts. In a few areas farmers were able to get some wheat sown last month, but, generally, ploughing is still in arrears, and in many districts the soil is not yet in a fit state to prepare it for seed sowing. The drier conditions also provided opportunities for carting potatoes from the pits, carrying out drainage work, and carting farmyard manure. The threshing of grain crops and the scutching of flax were also continued last month, and these operations are now nearing completion. Taken all over, seasonal farm work is probably about a month in arrears as compared with last season.

At present pastures are rather bare, but in most districts there is promise of an early "spring" of grass, and the milder weather has resulted in a good green colour on pasture land. Sheep owners, however, complain that the grass is standing less grazing than usual. Renovation of pastures proceeded during February, but in some areas scarcely as much was done as last season, as farmers were busily occupied with arrears of other seasonal work. Liming was carried out extensively, but basic slag being often difficult to obtain, was applied on a rather limited scale.

Supplies of home-grown fodder, with the exception of roots, appear to be at least sufficient to last for the remainder of the season on most farms. In some cases, however, the severe toll taken by the rains and frosts may result in a scarcity, and quality all over is variable. The hay is generally fairly good, but the bulk of the straw is of rather poor quality. Roots are scarce, as a large proportion of the turnip crop has been destroyed by frost, and consequent rotting. Mangels are in good condition, but unfortunately this crop is not widely grown in Northern Ireland. Where mangels are available they are being used to take the place of turnips in feeding to cattle. Many farmers are buying treacle to replace roots, and an early growth of grass would be welcomed. Purchased feeding stuffs were in normal supply, and prices tended to ease slightly in most instances, but as quotations are still on the high side, farmers are continuing to use home-grown foods as much as possible.

Generally speaking, cattle and sheep have withstood the severe season remarkably well, and the health of the animals remained highly satisfactory during February. No serious outbreaks of disease have been reported. The condition of stock is, however, rather below average, except where the animals were liberally hand-fed. In the case of sheep, lambing proceeded normally and was fairly general at the close of the month. Little trouble has been experienced, and so far the results give promise of a good crop of lambs this spring.

Trade in live stock showed little alteration during last month, and prices generally fluctuated slightly around the January levels.

THE CROPS.

WHEAT.—The more favourable weather conditions last month enabled further sowings of this crop to be made in some districts, but it is feared that in many districts the difficulties experienced in ploughing and sowing will result in a serious reduction in the total area under wheat.

The threshing of last year's crop has now been practically completed, and further reports of yields and quality are generally fairly satisfactory. Prices for small quantities marketed last month were generally little changed at from 5/- to 6/- per cwt.

OATS.—Threshing progressed steadily during February, and in most districts only a small proportion remains unthreshed. In some late areas, however, as much as half the crop has still to be dealt with. The results on the whole have been fairly satisfactory, and while bad harvesting conditions undoubtedly have had an adverse effect on quality, the damage to the grain has not been so serious as was at first anticipated. Although oats are being home-fed to a considerable extent, slightly larger quantities were marketed last month and the average price recorded a slight advance of $1\frac{1}{2}$ d. over the January figure at $5/9\frac{1}{4}$ d. per cwt.

Larger quantities of straw are available for stock feeding than was the case last season. Quality, however, is very variable and generally below normal. The average price for the somewhat heavier supplies marketed during February was reduced by 3d. to $41/10$ d. per ton.

It is expected that the area under oats this year will be much the same as in recent seasons. In some heavy soil areas ploughing difficulties may reduce the acreage, but this should be offset by increases in other districts.

BARLEY.—The threshing of this crop was generally completed during last month, and satisfactory reports regarding yields and quality continue to be received from the barley-growing districts. As barley is much in demand

for pig feeding, it seems probable that the area under this crop will be increased this year, and the subsidy payment provides an additional incentive to farmers to extend the acreage.

Only small quantities of barley were marketed last month. Prices of around 6/6d. per cwt. were recorded.

FLAX.—Most of the scutching has now been done, and the latest reports regarding yield and quality further emphasise the variability of the crop. Pedigree strains **have** given the best results, but taken all over, flax has been rather a disappointing crop this season. Prices for good quality fibre were a little better this year than last, but the lower prices paid for inferior lots reduced the average to about last season's level. The average price for flax marketed during February was 3d. above the corresponding figure in 1938, but $\frac{1}{2}$ d. below the average quotation for January this year at 10/2d. per stone.

POTATOES.—In most districts digging has been completed, but a fair proportion of the crop is still in pits. Tubers still in the ground have suffered very severely and, taking into account the damage done by frost, damp, and blight to potatoes in the pits, it has been estimated that, all over, yields have been reduced by from 1 to 2 tons per acre. There is, however, no likelihood of a shortage of ware potatoes except on a few farms. Difficulty in obtaining supplies of seed of the newer early varieties is reported from some districts.

The following figures show that while there was a decline in the volume of trade during the first half of February last, as compared with the returns for the preceding three weeks, there was an improvement in the latter half of the month although shipments continued on a much smaller scale than a year earlier. Trade generally may be stated to have remained quiet during the month under review but, following the slightly better tone noticeable at growers' markets in Great Britain, growers' prices in Northern Ireland showed some recovery at the end of February.

SHIPMENTS TO GREAT BRITAIN.

Week ended	Tons	Week ended	Tons
4th February, 1939	1,626	5th February, 1938	4,409
11th " "	1,777	12th " "	4,665
18th " "	2,523	19th " "	5,105
25th " "	2,211	26th " "	5,393

PRICES OF POTATOES.

The prices per ton paid by shipping merchants, for the week ended 4th March, 1939, ranged as follows:—

WARE.

Variety	Bagged				Loose			
Up-to-Date	£2	5	0	to £2 10 0	£2	0	0	to £2 5 0
Arran Banner	£1	17	6	" £2 5 0	£2	0	0	"
Arran Victory	£2	0	0	" £2 5 0	£2	0	0	" £2 2 6
Kerr's Pink	£2	0	0	" £3 0 0	£2	0	0	" £2 10 0
Majestic	£2	0	0	" £2 5 0				

SEED.

Up-to-Date	£3 15 0	—
Majestic	£3 10 0	—
Arran Banner	£3 5 0	—

The quantities of potatoes marketed for local consumption were similar to those offered in the previous month. Prices declined below the January levels. All main crop varieties were on average 5½d. cheaper at 3/0½d. per cwt., while the principal variety, Arran Victory, eased in price by 5d. to 3/- per cwt., and Kerr's Pink by 5½d. to 3/3d. per cwt.

The demand for seed during last month was variable, but generally similar to that ruling in 1938. Up-to-Date, Arran Banner, Majestic and Kerr's Pink were the varieties chiefly in request for export. The keenest demand was for the newer early varieties of seed and supplies of some are getting scarce.

MANGELS.—The condition of the roots is generally quite satisfactory, and they are now being fed to stock as the supply of swedes decreases.

TURNIPS.—Very heavy losses from rotting and disease have resulted from the rains and frosts, and crops still in the drills have been almost completely destroyed. The bad weather also prevented proper storing in many instances, and nearly half this crop has been ruined. The shortage of roots is now becoming acute on many farms, and the lack of turnips will probably be felt even more severely later in the season. An early growth of spring grass would, therefore, be very welcome this year.

HAY.—Supplies of upland and meadow hay were about normal, and sufficient for the demand. Quality was variable but generally moderate. The average quotation for the increased quantities of upland hay sold at market centres during February declined by 7d. on the month to 61/4d. per ton, but meadow hay improved in price by 1/3d. to 44/2d. per ton.

Rye-grass seed was marketed last month in quantities similar to those in January. Supplies of Italian were larger, and the average price advanced by 1/0½d. to 19/7½d. per cwt., but decreased offerings of Perennial seed cheapened slightly by 4d. to 19/0½d. per cwt. Crested dogstail seed fetched late rates of from 65/- to 85/- per cwt. last month.

LIVE STOCK.

CATTLE.—Store cattle were maintained in a good state of health during February, but the severity of the season and the shortage of good keep have generally resulted in a decline in condition, and outlying stores are rather thin. No serious outbreaks of "hoose" or other disease have, however, been reported.

The numbers of store cattle exposed for sale at Northern Ireland fairs last month remained below average, but more animals were forward than in January. Demand was well maintained for the best types, but inferior animals were again difficult to dispose of. Prices as a rule remained around recent levels.

The health of dairy cattle continued to be normally satisfactory, but their condition generally is only moderate. Calving, generally, was about normal, but in some cases there will be a higher proportion of late calves than usual. A few cases of sterility and abortion have been reported, but these maladies appear to be causing less trouble than they did a few months ago.

Dairy cattle were offered in larger numbers at fair centres, but quality was poor and trade consequently dull. The best animals sold readily at late rates, but prices generally were lower on the month.

SHEEP.—While the health of the flocks is normally good, their general condition is rather below average, especially in the case of mountain sheep. Outbreaks of foot rot amongst sheep on wet land have been reported, but generally this trouble is less prevalent than usual. Liver-fluke disease has also been kept well in check by preventive measures.

The lambing season has generally commenced, and progress has been normal in most districts. There is every promise of a good crop of lambs, but the proportion of twins seems to be scarcely as high as it was at this time last year. "Twin lamb" or pregnancy disease has not been troublesome this season.

Increased numbers of fat sheep and lambs were offered last month, and trade generally was brisk at higher prices for good animals showing finish.

PIGS.—Supplies of young pigs were generally sufficient for requirements. Trade was quiet at the beginning of the month, but improved towards the end, and prices firmed slightly. Breeding sows of variable quality were offered in normal numbers, and encountered a moderate trade at firm prices ranging from £6 to £14 per head according to quality. Supplies of dead pigs were generally of average dimensions, and demand from the curers was steady.

The weekly returns of (1) shipments of live pigs to Great Britain, and (2) purchases of dead and live pigs in Northern Ireland last month are compared hereunder, with corresponding details for 1938 in brackets.

Week ended	(1) Shipments to Great Britain		(2) Bought dead and alive for curing in Northern Ireland		Total
			Dead	Alive	
4/2/39	943	(2,132)	7,538	(8,651)	4,991 (3,048)
11/2/39	859	(1,844)	7,827	(8,857)	5,830 (2,767)
18/2/39	1,025	(2,087)	7,686	(8,393)	5,825 (2,844)
25/2/39	1,005	(1,348)	7,779	(7,782)	5,375 (2,484)
4/3/39	676	(1,699)	8,203	(8,525)	5,589 (3,213)
9 weeks ended 4/3/39	9,161	(21,859)	72,251	(76,897)	49,286 (22,822)
					130,698 (121,578)

HORSES.—The trade for farm horses continued quiet and normal supplies sold at around late quotations. Good working animals fetched from £20 to £45 per head according to quality, while older horses made from £10 to £30. Unbroken colts were selling at from £15 to £25, and foals from £10 to £15 each.

MILK.—In some districts the yields had an upward tendency last month, and creamery supplies were about normal, but most of the reports to hand indicate that the milk yields were below average during February. The rather low supplies may be accounted for by the shortage of roots for feeding dairy cattle and the inferior quality of other fodder, combined with the effects of the severe winter season.

The prices paid by creameries during February were similar to those ruling in recent months, and ranged from $4\frac{3}{4}$ d. to 6d. per gallon for milk delivered, the separated milk being returned to the farmer. The rate of equalisation payment, in accordance with the Milk and Milk Products Acts (Northern Ireland), 1934 to 1938, for milk produced in Northern Ireland and delivered to the creameries for manufacturing purposes has been determined at 0.17d. per gallon for the month of February, 1939.

It should be noted that, under the regulations, creameries are required to distribute the equalisation payment in accordance with the butter-fat content of the milk received from each supplier.

THE COST OF LIVING INDEX FIGURE.

The cost of maintaining unchanged the pre-war standard of living of working-class families at February 1st, was approximately 55 per cent. over the level of July, 1914, as compared with 55 per cent. at December 31st, 1938, and 57 per cent. at February 1st, 1938.

At February 1st the index of retail prices of food in Great Britain and Northern Ireland, as ascertained by the Ministry of Labour, was 38 per cent. above that of July, 1914, or the same as that ruling at December 31st, 1938, no important changes in average prices being recorded for the articles of food used in the compilation of the index. The corresponding figure for February 1st, 1938, was 42 per cent.

THE MARKETS DURING FEBRUARY.

At the markets last month supplies of the principal vegetables were scarcer as compared with the previous month, and price movements generally tended upwards. The average price of cabbage was 1d. dearer at $1\frac{1}{4}$ d. per dozen, and savoy's firmed by $\frac{1}{4}$ d. to $1\frac{1}{2}\frac{1}{4}$ d. per dozen, while cauliflowers cheapened by $1\frac{1}{2}$ d. to $2\frac{1}{10}\frac{1}{2}$ d. per dozen. Parsley improved in price by $1\frac{3}{4}$ d. to $1\frac{1}{2}\frac{1}{4}$ d. per bunch; leeks by $\frac{1}{4}$ d. to 7d. per bunch; carrots by $1\frac{3}{4}\frac{1}{4}$ d. to $8\frac{1}{11}\frac{3}{4}$ d. per cwt. ;

parsnips by $2\frac{3}{4}$ d. to $6\frac{3}{4}$ d. per cwt., but garden turnips at $11\frac{1}{4}$ d. per cwt. were $\frac{3}{4}$ d. cheaper than in January.

In the provision markets supplies of farmers' print butter were unaltered, while lump butter was slightly increased in quantity, and average prices firmed by $\frac{1}{4}$ d. to $1\frac{3}{8}$ d. and $1\frac{1}{2}$ d. per lb. respectively. Hen and duck eggs showed seasonal increases in supplies, and the prices fixed by the Ministry from week to week followed the seasonal trend, as shown in the table below.

In the poultry section supplies of hens were unchanged as compared with the previous month, but chickens and ducks were less numerous. Prices were a little cheaper on the month, hens and ducks being $1\frac{1}{2}$ d. cheaper at $1\frac{1}{9}$ d. and $2\frac{3}{4}$ d. each respectively, and chickens $1\frac{1}{4}$ d. cheaper at $2\frac{7}{8}$ d. each. The prices per lb. live weight paid by wholesale merchants during last month were: Chickens, large, 9d. to 11d.; medium, 8d. to 10d.; small, 7d. to 9d.; hens and ducks, 5d. to 7d.

At Omagh, small lots of unwashed wool were marketed during the month at unchanged rates of 7d. per lb. for long wool and 6d. per lb. for mountain wool.

MARKETING OF EGGS ACTS (N.I.) 1924—1937.

The following table shows the prices fixed by the Ministry and payable by licensed wholesale dealers for eggs purchased from producers during the weeks specified, as compared with the prices fixed for the corresponding weeks of 1938.

Week ended	1939		1938	
	Hen eggs per lb.*	Duck eggs per doz.*	Hen eggs per lb.	Duck eggs per doz.
February 4	s. d. 0 8	s. d. 1 4	s. d. 0 10 $\frac{1}{2}$	s. d. 1 6 $\frac{1}{2}$
" 11	0 7	1 4	0 9 $\frac{3}{4}$	1 4 $\frac{1}{2}$
" 18	0 6 $\frac{1}{2}$	1 2	0 8 $\frac{3}{4}$	1 2 $\frac{1}{2}$
" 25	0 6 $\frac{1}{2}$	1 0	0 7 $\frac{1}{2}$	1 1
March 4	0 6 $\frac{1}{4}$	0 10	0 6 $\frac{1}{4}$	1 0 $\frac{1}{2}$

*When hen eggs are delivered by the producer to the packing store of a licensed wholesale dealer of Class A an additional $\frac{1}{2}$ d. per lb. is payable; in the case of duck eggs an additional $\frac{3}{4}$ d. is payable for each complete dozen so delivered.

Payment on a quality basis came into operation during the week ended 5th March, 1938.

The following were the standard deductions:—

Hen eggs: "Seconds" and soiled eggs $\frac{1}{2}$ d. per egg, rejects 1d. per egg during the weeks ended 4th and 11th February, afterwards $\frac{3}{4}$ d. per egg.

Duck eggs: Rejects $1\frac{1}{4}$ d. per egg during the first three weeks in February; during the weeks ended 25th February and 4th March, 1d. per egg and $\frac{3}{4}$ d. per egg respectively.

LONDON EGG PRICES.

Return of average prices of eggs at London on Monday each week, furnished by the London Egg Exchange, and published in the Weekly Dairy Produce Notes of the Imperial Economic Committee.

Hen Eggs, per 120.

Description				6/2/39	13/2/39	20/2/39	27/2/39
English, National Mark	(Specials)	...	...	14/6	13/6	13/3	13/3
"	"	(Standards)	...	13/6	12/6	12/-	12/-
"	"	(Mediums)	...	13/-	12/-	11/-	11/-
"	"	(Pullets)	...	12/6	11/6	10/6	10/6
Northern Ireland	(Extra Specials)	...	...	14/-	13/-	12/9 13/-	13/-
"	"	(Specials)	...	13/3 13/9	12/3 12/9	12/- 12/3	12/- 12/3
"	"	(Standards)	...	12/9 13/3	11/6	11/- 11/3	11/3
"	"	(Selected)	...	11/9 12/3	10/9 11/-	10/3 10/6	10/3 10/6

EXTENT AND PRODUCE OF THE FLAX CROP IN NORTHERN IRELAND IN 1938.

The average yield of the flax crop in Northern Ireland in 1938 is estimated at 31.5 stones (of 14 lb.) per statute acre, as against 35.1 stones in 1937 and 32.7 stones in the decennial period 1928-1937.

The following table shows the estimated extent, total produce and average yield per statute acre of the crop in Northern Ireland in 1938, with comparative figures for the year 1937 and the decennial period 1928-1937.

FLAX.

Year				Extent	Produce	Average yield per statute acre.
				Acres	Tons	Stones (of 14 lb.)
1938	...	...	...	20,532	4,036	31.5
1937	...	...	...	19,099	4,187	35.1
Average of the ten years' period 1928 to 1937				21,089	4,262	32.7

LIVE STOCK CENSUS, 1st JANUARY, 1939.

Statement showing the numbers of Cattle, Sheep, Pigs and Poultry in Northern Ireland as at 1st January, 1939, 1st June, 1938, and 1st January, 1938, and the percentage changes in the numbers at 1st January, 1939, as compared with the numbers at 1st June, 1938, and 1st January, 1938.

	1st January, 1939	1st June, 1938	1st January, 1938	% changes as compared with	
				June, 1938	January, 1938
Cattle :					
Bulls (for service) ...	4,497	4,568	4,228	— 1.6	+ 6.4
Cows in milk ...	159,655	229,262	229,999	+ 4.1	+ 3.8
Cows in calf but not in milk ...	79,054	30,085	34,863	+32.3	+14.1
Heifers in calf ...	39,791				
Other Cattle—					
Two years old and upwards ...	74,397	84,985	71,080	—12.5	+ 4.7
One year and under two years ...	157,172	190,972	156,312	—17.7	+ 0.6
Under one year ...	185,998	192,058	185,923	— 3.2	+ 0.0
Total ...	700,564	731,930	682,405	— 4.3	+ 2.7
Sheep :					
Rams (for service) ...	17,507	12,772	17,451	+37.1	+ 0.3
Ewes (for breeding) ...	436,710	401,850	426,272	+ 8.7	+ 2.4
Other sheep—					
One year old and upwards ...	25,770	46,001	26,185	—44.0	— 1.6
Under one year ...	71,275	432,808	90,984	—83.5	—21.7
Total ...	551,262	893,431	560,892	—38.3	— 1.7
Pigs :					
Boars (for service) ...	1,609	1,521	1,498	+ 5.8	+ 7.4
Sows (for breeding) ...	59,848	57,886	53,107	+ 3.4	+12.7
Other Pigs—					
Five months old and upwards ...	83,423	82,655	81,546	+ 0.9	+ 2.3
Over two and under five months old ...	239,592	230,393	221,360	+ 4.0	+ 8.2
Under two months old ...	181,254	189,044	165,576	— 4.1	+ 9.5
Total ...	565,726	561,499	523,087	+ 0.8	+ 8.2
Poultry :					
Turkeys ...	57,631	456,214	65,318	—87.4	—11.8
Geese ...	31,274	113,169	33,219	—72.4	— 5.9
Ducks ...	310,814	424,563	325,782	—26.8	— 4.6
Ordinary Fowl ...	5,638,282	9,199,092	5,791,630	—38.7	— 2.6
Total ...	6,038,001	10,193,038	6,215,949	—40.8	— 2.9

EXTENT AND PRODUCE OF POTATOES, TURNIPS AND MANGELS.

Table showing the Estimated Total Production Area and average yield per statute acre of Potatoes, Turnips, Mangels and Flax for the year 1938, with comparative figures for 1937, and the decennial period 1928-1937.

Crop.	Estimated Total Production.				Area.		Average Yield per Statute Acre.		
	1938	1937	Average for decennial period 1928-1937	1938	1937	Average for decennial period 1928-1937	1938	1937	Average for decennial period 1928-1937
Potatoes	tons 711,369	tons 867,979	tons 936,927	acres 123,483	acres 125,426	acres 138,212	tons 5.8	tons 6.9	tons 6.8
Turnips	320,497	482,307	621,692	26,345	28,660	36,427	12.2	16.8	17.0
Mangels	16,222	17,459	18,021	1,047	1,096	1,080	15.5	15.9	16.7

THE NEW AGRICULTURAL INDEX NUMBER.

(PART II).

In this, the second instalment of agricultural index numbers for the years 1927-1938, the following tables are published :—

(1) Index numbers showing the changes year by year in the prices of agricultural commodities produced for sale in Northern Ireland, including the prices of live stock and live stock products which were published last month. The annual index number for "all milk" has been revised on the discovery of an error in the weights used for liquid and manufactured milk. For information about milk prices, therefore, readers should refer in future to the final and correct index for "all milk" shown in Table 1 of this report, and not to Table 1 on page 579 of the February issue.

At the foot of Table 1 on page 664 the composite or general index showing changes in the price level for Northern Ireland agricultural produce is published. The meaning of this index, and the way in which it was constructed was explained in the article last month.

The table showing the weights used for constructing the general index is given below.

Weights used in the Calculation of General Index Numbers of
Agricultural Produce. 1927 to 1938.

[illegible]

The weights shown for any year are obtained by averaging the output of each commodity for the latest five years for which the information is available. For example, to obtain weights for 1936, outputs over the years 1931-1935 have been averaged and valued at the prices of the base period, the values then being shown as proportions of the total value. One of the interesting features of the table of weights is the very striking increase in the importance of pigs in the total output since 1932.

(2) Monthly index numbers showing the movement of prices of milk, for manufactured milk, milk for liquid consumption and "all milk". Separate index numbers are given to include Government payments in respect of manufactured milk. Previously published indices of manufactured and whole milk are republished in this report in order that all the information regarding milk prices may be had for reference in this volume.

(3) Monthly indices for crops corrected for seasonal fluctuation. The meaning of these corrected indices was explained on page 575 of the article in last month's report. A difficulty arises over crop prices in that there are no quotations for some crops, such as flax and grass-seed, in certain months of the year. Since the prices of these crops show a definite fluctuation within the season, a special method has had to be used to correct these crop prices for seasonal variation.

(4) Monthly indices for crops uncorrected for seasonal fluctuation.

(5) The average prices for crops in each month and each year over the period under review.

PUBLICATION OF FURTHER INDICES.—The Ministry hopes to publish composite monthly indices in the April Report, together with indices for feeding stuffs and fertilisers. A reader of the article in the February Report suggested that it might be possible to prepare index numbers for specific feeding stuffs rations, e.g., for pigs or poultry, in addition to general and individual feeding stuff indices. This point was, in fact, discussed at the Committee on Index Numbers, and the Ministry hopes to prepare some index numbers for these rations. Readers will appreciate that the work involved in the preparation of these index numbers is already considerable, and it might not be possible to publish regularly index numbers for various rations.

TABLE I.

ANNUAL INDEX NUMBERS OF PRICES OF INDIVIDUAL COMMODITIES. 1927 to 1938.
(Base 1927-29 = 100).

Commodity	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
Cattle : Fat ...	98	103	99	101	91	87	77	77	69	75	85	83
Cattle : Store ...	103	98	99	103	89	83	76	72	72	78	89	93
Cows : Fat ...	106	97	97	96	83	81	68	68	61	64	71	70
Sheep : Fat ...	104	104	92	91	75	59	58	60	60	60	69	60
Bacon Pigs ...	94	96	110	98	71	64	71	75	72	73	84	85
Hens and Chickens ...	105	100	95	89	90	79	71	64	66	69	73	72
Ducks ...	104	108	89	93	82	83	80	79	80	84	95	98
Turkeys ...	113	101	86	92	131	91	59	66	105	98	91	93
All Poultry ...	102	103	95	95	103	80	67	60	70	70	71	69
Eggs ...	98	98	104	81	71	68	67	63	68	72	79	82
Milk : for Manufacture ...	97	103	101	80	70	67	57	51	61	69	79	82
Milk : Whole ...	100	100	100	100	90	108	92	92	98	96	106	115
Milk : All ...	98	101	100	89	79	85	73	69	75	79	89	94
Farmers' Butter ...	97	100	103	88	71	67	58	53	62	66	73	82
Wool ...	94	107	98	50	33	20	33	39	40	58	109	51
Wheat ...	94	101	105	95	74	53	45	45	45	63	78	52
Potatoes ...	106	115	79	72	146	119	53	70	77	111	109	85
Oats ...	96	110	94	76	85	79	55	68	66	67	87	82
Hay ...	82	101	117	88	75	71	71	66	70	83	87	76
Oat Straw ...	80	94	125	95	86	81	76	66	77	93	98	89
Flax ...	97	114	89	65	42	59	69	73	81	72	80	79
Grass Seed : Perennial ...	130	84	86	83	65	55	109	115	84	93	60	110
Italian ...	104	83	113	60	49	40	120	98	59	46	38	83
Mixed ...	112	81	107	73	49	42	130	118	57	67	43	79
All ...	120	82	99	75	56	48	120	114	69	71	50	98
General Index ...	100.5	101.5	98	88	85.5	79.5	69.5	69.5	71.5	77	83.5	83.5

Revised Index Numbers due to Government Payments for Cattle, Milk and Wheat.

Cattle : Fat ...	—	—	—	—	—	—	—	79	81	86	97	95
Milk : for Manufacture ...	—	—	—	—	—	—	—	81	87	89	92	103
Milk : All ...	—	—	—	—	—	—	—	86	91	91	97	108
Wheat ...	—	—	—	—	—	93	89	80	77	79	91	93*
General Index ...	—	—	—	—	—	79.5	69.5	71	73.5	78.5	85.5	85.5*

* Provisional.

The general index shown above brings out the rapid fall in the price level between 1928 and 1933, and the rise in prices following the year 1934 which coincides with the Government's new policy of protection, marketing re-organisation and assistance to farmers.

If Government payments are taken into account the index shows a rise of 2 points above the general index which excludes these payments.

TABLE II.

Monthly Index Numbers of Prices of Milk, 1927-1938. (Base 1927-29=100).

(a) Corrected for Seasonal Variation.

MILK : FOR MANUFACTURE.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	93	98	106	97	75	81	67	61	55	70	73	87
February ...	94	99	104	93	81	80	66	59	55	70	74	85
March ...	95	102	103	88	82	81	63	60	58	69	77	84
April ...	99	106	103	87	80	82	62	59	58	67	82	88
May ...	106	110	110	86	79	76	59	60	58	69	82	94
June ...	107	112	111	88	76	69	59	57	59	75	81	90
July ...	101	115	111	92	70	72	58	52	62	78	83	87
August ...	104	113	108	87	73	71	58	52	66	78	82	85
September ...	109	110	108	80	72	69	62	48	71	73	81	83
October ...	107	109	108	73	73	66	63	48	77	69	92	83
November ...	109	106	106	72	74	66	64	50	73	74	95	86
December ...	102	108	99	71	79	68	61	52	75	75	94	88

MILK : FOR MANUFACTURE.

(Revised Index Numbers taking account of Bonus and Equalisation Payments).

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	—	—	—	—	—	—	—	—	85	87	89	102
February ...	—	—	—	—	—	—	—	—	84	86	88	102
March ...	—	—	—	—	—	—	—	—	87	90	92	108
April ...	—	—	—	—	—	—	—	80	84	86	89	105
May ...	—	—	—	—	—	—	—	91	95	97	98	112
June ...	—	—	—	—	—	—	—	94	98	100	102	113
July ...	—	—	—	—	—	—	—	93	97	99	100	109
August ...	—	—	—	—	—	—	—	89	93	95	95	105
September ...	—	—	—	—	—	—	—	83	87	89	89	100
October ...	—	—	—	—	—	—	—	95	99	100	101	120
November ...	—	—	—	—	—	—	—	90	94	96	107	115
December ...	—	—	—	—	—	—	—	85	89	90	106	107

MILK : WHOLE.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	107	107	107	107	100	107	90	85	94	82	85	106
February ...	103	103	103	103	95	110	93	88	97	85	100	107
March ...	99	99	99	99	91	114	97	91	100	88	103	110
April ...	99	99	99	99	91	99	99	84	109	95	112	119
May ...	103	103	103	103	84	112	84	79	105	107	112	115
June ...	83	83	83	83	93	124	93	88	106	119	119	125
July ...	87	87	87	87	97	130	97	92	110	125	125	129
August ...	104	104	104	104	85	113	85	80	96	109	109	117
September ...	103	103	103	103	77	103	77	107	99	99	99	107
October ...	100	100	100	100	75	100	94	104	96	96	121	122
November ...	108	108	108	100	69	104	92	96	89	89	112	114
December ...	106	106	106	99	106	96	85	91	81	81	102	105

ALL MILK.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	104	105	107	104	92	99	82	75	79	77	80	98
February ...	101	102	103	100	91	102	85	77	82	79	90	99
March ...	98	100	100	95	88	104	85	79	82	79	92	99
April ...	99	102	101	94	87	92	84	74	83	80	97	103
May ...	105	107	107	93	81	92	69	69	73	81	92	101
June ...	101	104	102	86	81	87	69	67	72	86	91	99
July ...	98	108	105	91	78	89	70	64	74	89	94	98
August ...	104	111	107	92	77	84	66	61	74	86	90	93
September ...	107	108	106	89	74	80	67	69	80	80	86	90
October ...	104	106	105	85	74	79	76	70	84	78	102	96
November ...	108	107	107	87	71	85	78	73	80	81	102	99
December ...	104	107	103	88	97	85	75	74	78	78	98	97

ALL MILK.

(Revised Index Numbers taking account of Bonus and Equalisation Payments).

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	—	—	—	—	—	—	—	—	91	84	87	104
February ...	—	—	—	—	—	—	—	—	92	85	96	105
March ...	—	—	—	—	—	—	—	—	95	89	98	109
April ...	—	—	—	—	—	—	—	82	96	90	101	112
May ...	—	—	—	—	—	—	—	86	98	100	103	113
June ...	—	—	—	—	—	—	—	92	100	105	106	116
July ...	—	—	—	—	—	—	—	93	100	105	106	114
August ...	—	—	—	—	—	—	—	86	94	99	99	108
September ...	—	—	—	—	—	—	—	92	91	92	92	102
October ...	—	—	—	—	—	—	—	99	98	99	108	121
November ...	—	—	—	—	—	—	—	93	92	93	109	115
December ...	—	—	—	—	—	—	—	88	85	85	104	106

(b) Uncorrected for Seasonal Variation.

MILK : FOR MANUFACTURE.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	106	113	121	111	86	93	77	70	63	81	84	100
February ...	109	115	121	109	95	93	76	69	64	82	86	99
March ...	106	113	115	98	91	90	71	66	65	77	85	94
April ...	98	105	102	86	79	81	61	59	57	66	81	87
May ...	93	96	96	75	69	66	52	52	50	60	72	82
June ...	90	94	93	74	64	58	49	48	49	63	68	75
July ...	86	98	94	78	60	61	49	44	53	67	70	75
August ...	93	101	96	77	65	64	51	46	59	70	74	76
September ...	104	106	103	77	68	66	59	46	68	70	78	79
October ...	107	109	108	74	73	66	63	48	77	69	92	82
November ...	115	112	112	76	78	69	67	53	77	78	100	90
December ...	115	121	111	80	88	77	68	58	84	84	105	99

MILK : FOR MANUFACTURE.

(Revised Index Numbers taking account of Bonus and Equalisation Payments).

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	—	—	—	—	—	—	—	—	98	100	101	117
February ...	—	—	—	—	—	—	—	—	97	100	102	119
March ...	—	—	—	—	—	—	—	—	98	101	103	120
April ...	—	—	—	—	—	—	—	79	82	85	88	104
May ...	—	—	—	—	—	—	—	79	83	85	86	98
June ...	—	—	—	—	—	—	—	79	83	84	85	94
July ...	—	—	—	—	—	—	—	79	83	84	85	94
August ...	—	—	—	—	—	—	—	79	83	84	85	94
September ...	—	—	—	—	—	—	—	79	83	85	85	95
October ...	—	—	—	—	—	—	—	95	99	101	101	119
November ...	—	—	—	—	—	—	—	95	99	101	113	120
December ...	—	—	—	—	—	—	—	95	99	101	119	121

MILK : WHOLE.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	125	125	125	125	117	125	106	100	110	96	100	121
February ...	117	117	117	117	108	125	106	100	110	96	112	121
March ...	108	108	108	108	100	125	106	100	110	96	112	121
April ...	100	100	100	100	92	100	100	85	110	96	112	121
May ...	92	92	92	92	75	100	75	71	94	96	100	104
June ...	67	67	67	67	75	100	75	71	85	96	96	104
July ...	67	67	67	67	75	100	75	71	85	96	96	104
August ...	92	92	92	92	75	100	75	71	85	96	96	104
September ...	100	100	100	100	75	100	75	104	96	96	96	104
October ...	100	100	100	100	75	100	94	104	96	96	121	121
November ...	117	117	117	108	75	112	100	104	96	96	121	121
December ...	125	125	125	117	125	112	100	108	96	96	121	121

ALL MILK.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	120	122	124	121	107	116	96	88	92	89	94	112
February ...	115	116	118	115	105	116	97	89	94	90	102	113
March ...	108	110	110	104	97	115	94	86	91	87	101	110
April ...	99	102	101	94	87	93	85	74	83	79	97	103
May ...	93	94	94	82	72	81	61	61	65	71	81	90
June ...	84	87	85	72	68	71	57	55	59	71	75	83
July ...	81	90	87	75	64	72	57	52	61	74	77	82
August ...	93	99	95	82	68	75	58	54	66	77	80	83
September ...	103	104	102	86	71	77	64	67	77	77	83	86
October ...	104	106	105	85	74	79	76	70	84	78	102	95
November ...	116	115	115	94	76	91	83	78	85	86	109	104
December ...	121	124	120	103	113	98	87	87	90	91	114	111

ALL MILK.

(Revised Index Numbers taking account of Bonus and Equalisation Payments)

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	—	—	—	—	—	—	—	—	105	98	100	119
February ...	—	—	—	—	—	—	—	—	105	98	108	120
March ...	—	—	—	—	—	—	—	—	105	98	108	121
April ...	—	—	—	—	—	—	—	83	96	90	100	112
May ...	—	—	—	—	—	—	—	75	87	88	91	100
June ...	—	—	—	—	—	—	—	76	84	87	88	97
July ...	—	—	—	—	—	—	—	77	83	87	88	97
August ...	—	—	—	—	—	—	—	77	84	87	88	94
September ...	—	—	—	—	—	—	—	88	87	88	88	98
October ...	—	—	—	—	—	—	—	99	98	99	108	120
November ...	—	—	—	—	—	—	—	99	98	99	117	120
December ...	—	—	—	—	—	—	—	102	97	98	120	121

TABLE III.

Monthly Index Numbers of Prices of Crops. 1927 to 1938.

(Corrected for Seasonal Variation).

(Base 1927-29 = 100).

WHEAT.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	90	94	104	96	75	77	48	44	45	49	72	81
February ...	91	98	104	99	68	78	47	43	44	51	67	79
March ...	97	105	108	106	68	—	50	43	45	51	75	78
April ...	95	110	111	107	70	—	48	43	44	49	74	73
May ...	101	—	112	108	71	—	49	41	44	49	75	75
June ...	—	—	—	—	—	—	47	48	46	52	77	84
July ...	—	—	—	—	—	—	46	48	46	52	77	82
August ...	—	—	—	—	—	56	46	47	42	63	81	46
September ...	92	—	—	—	—	56	45	45	44	65	82	46
October ...	93	—	104	93	—	54	44	45	47	68	85	48
November ...	94	98	102	90	78	51	44	46	48	70	84	48
December ...	93	99	101	83	79	51	44	46	48	72	85	48

WHEAT.

(Revised Index Numbers taking account of Payments under the Wheat Act).

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	—	—	—	—	—	—	90	90	81	82	85	98
February ...	—	—	—	—	—	—	89	89	80	84	79	97
March ...	—	—	—	—	—	—	88	86	78	80	84	91
April ...	—	—	—	—	—	—	86	84	76	78	82	86
May ...	—	—	—	—	—	—	88	83	76	77	83	88
June ...	—	—	—	—	—	—	85	89	78	80	84	96
July ...	—	—	—	—	—	—	79	91	79	81	85	95
August ...	—	—	—	—	—	98	93	83	74	74	96	93*
September ...	—	—	—	—	—	99	91	82	76	76	102	92*
October ...	—	—	—	—	—	97	90	81	79	79	101	95*
November ...	—	—	—	—	—	93	90	82	80	81	100	95*
December ...	—	—	—	—	—	94	90	82	80	84	101	95*

* Provisional.

POTATOES.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	101	102	77	65	109	220	46	53	68	122	118	66
February ...	104	105	83	58	114	200	46	53	65	132	119	67
March ...	108	134	95	56	120	200	44	45	55	121	127	67
April ...	103	171	84	43	144	197	39	51	56	114	133	78
May ...	126	177	74	42	134	166	42	56	81	103	154	112
June ...	129	166	64	42	184	140	41	60	96	86	161	145
July ...	158	161	67	42	214	96	35	73	77	82	161	168
August ...	82	96	71	78	179	52	56	107	98	74	78	76
September ...	96	98	86	88	163	55	57	90	89	95	86	84
October ...	103	91	75	95	166	54	67	90	77	108	83	83
November ...	149	88	79	85	153	51	67	79	73	111	78	77
December ...	101	83	80	87	174	55	62	72	106	119	77	79

OATS.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	92	113	107	84	74	106	61	61	74	67	84	97
February ...	91	116	109	79	75	102	59	72	72	66	88	97
March ...	92	122	111	79	72	102	57	71	67	63	88	93
April ...	93	128	111	81	80	98	54	67	64	64	94	90
May ...	91	134	103	87	82	96	53	64	66	62	97	87
June ...	104	135	97	85	85	95	57	61	68	61	98	86
July ...	103	125	95	82	87	93	56	62	66	61	89	87
August ...	102	121	101	80	89	88	56	64	65	59	102	86
September ...	104	113	99	78	100	73	54	72	69	83	93	76
October ...	109	103	95	78	85	71	60	77	73	80	97	73
November ...	105	107	87	76	108	68	57	75	70	76	93	72
December ...	111	108	86	75	110	64	59	74	67	76	93	74

HAY.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	82	88	118	100	81	69	73	68	71	77	83	78
February ...	75	86	133	100	77	68	70	62	71	82	86	77
March ...	70	88	136	94	74	67	75	63	70	84	90	73
April ...	78	95	129	85	72	73	73	66	70	83	92	74
May ...	84	103	128	82	75	74	74	65	69	79	91	75
June ...	79	105	123	82	78	68	73	69	70	79	91	76
July ...	85	113	116	86	77	70	69	62	69	82	96	76
August ...	91	111	106	83	80	74	69	62	68	93	97	83
September ...	90	115	109	83	75	72	68	65	69	92	91	81
October ...	92	108	104	86	72	72	70	71	67	89	83	77
November ...	89	112	104	84	70	73	69	72	70	86	81	78
December ...	90	117	102	81	69	72	68	73	73	84	85	77

OAT STRAW.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	89	78	127	104	83	83	73	70	73	82	94	88
February ...	82	79	136	99	81	78	73	61	78	91	95	88
March ...	73	89	135	89	83	77	77	58	77	94	99	89
April ...	75	99	122	88	82	83	77	58	74	92	104	86
May ...	81	89	121	90	85	86	77	64	73	90	103	88
June ...	83	92	117	87	87	89	77	63	72	90	106	90
July ...	79	91	115	94	91	81	81	64	69	91	103	81
August ...	80	92	130	91	89	84	72	61	69	93	103	88
September ...	78	88	120	96	92	81	73	67	72	90	93	89
October ...	82	89	113	88	92	79	78	69	75	90	93	91
November ...	78	105	109	87	88	78	74	71	77	92	91	90
December ...	79	114	108	86	86	75	72	72	78	96	93	87

FLAX.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	65	122	91	71	38	61	64	67	82	69	76	76
February ...	72	123	95	66	37	52	63	70	89	69	76	76
March ...	88	120	91	63	39	54	61	69	84	68	73	78
April ...	82	115	90	70	42	52	—	—	78	63	76	70
May ...	88	—	88	67	45	52	—	—	—	62	78	—
June ...	58	—	96	—	53	—	—	—	—	72	—	—
July ...	—	—	—	—	—	—	—	—	—	—	—	—
August ...	—	—	—	—	—	—	—	—	—	—	—	—
September ...	—	—	—	—	—	—	—	—	—	—	—	—
October ...	126	88	85	45	48	58	72	68	68	71	82	77
November ...	116	86	74	41	58	62	69	70	73	70	76	75
December ...	116	91	71	39	63	63	65	70	69	72	75	75

GRASS SEED : PERENNIAL.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	148	104	76	81	79	74	49	119	131	75	87	48
February ...	145	99	79	81	76	72	49	119	155	68	82	45
March ...	143	92	77	82	70	78	51	124	168	61	82	46
April ...	—	—	81	86	69	83	—	—	—	63	83	49
May ...	—	—	—	—	—	—	—	—	—	82	—	—
June ...	—	—	—	—	—	—	—	—	—	—	—	—
July ...	—	—	—	—	—	—	—	—	—	—	—	—
August ...	131	116	93	90	72	46	64	143	86	97	59	108
September ...	141	95	97	86	61	52	100	122	71	105	62	120
October ...	137	83	88	82	66	56	119	116	76	101	59	117
November ...	126	77	84	91	70	57	128	117	81	92	84	125
December ...	117	77	83	91	73	55	131	113	82	94	55	121

GRASS SEED : ITALIAN.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	—	79	—	—	48	50	—	—	84	41	38	31
February ...	—	77	103	—	—	—	—	—	107	43	40	38
March ...	—	—	—	—	—	—	50	—	133	42	41	45
April ...	—	—	—	—	—	—	—	—	—	48	46	54
May ...	—	—	—	—	—	—	—	—	—	—	—	—
June ...	—	—	—	—	—	—	—	—	—	—	—	—
July ...	—	—	—	—	—	—	—	—	—	—	—	—
August ...	—	—	—	—	—	—	—	98	—	—	—	—
September ...	103	93	118	73	42	37	92	120	58	—	27	96
October ...	107	82	121	63	47	37	125	103	53	49	36	79
November ...	110	85	112	61	51	41	131	98	51	44	34	104
December ...	115	94	110	66	53	34	—	107	55	50	38	110

GRASS SEED : MIXED.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	—	112	82	—	66	51	47	127	113	59	67	43
February ...	—	84	73	—	51	37	—	—	138	—	59	33
March ...	—	—	99	—	—	—	—	—	—	67	—	—
April ...	—	—	—	—	—	—	—	—	—	—	—	—
May ...	—	—	—	—	—	—	—	—	—	—	—	—
June ...	—	—	—	—	—	—	—	—	—	—	—	—
July ...	—	—	—	—	—	—	—	—	—	—	—	—
August ...	—	116	—	—	—	—	—	138	52	—	—	—
September ...	113	97	109	80	46	39	138	124	60	78	48	79
October ...	121	83	115	74	52	44	135	123	59	72	45	80
November ...	117	79	110	76	57	48	142	122	61	63	43	93
December ...	115	78	115	71	54	52	137	121	61	68	46	100

GRASS SEED : ALL.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	147	102	73	80	76	68	48	117	126	62	69	47
February ...	143	96	79	79	69	65	48	117	147	61	63	48
March ...	136	87	73	78	66	74	55	118	161	55	67	54
April ...	—	—	77	81	65	78	—	—	—	58	64	65
May ...	—	—	—	—	—	—	—	—	—	70	—	60
June ...	—	—	—	—	—	—	—	—	—	—	—	—
July ...	—	—	—	—	—	—	—	—	—	—	—	—
August ...	125	111	90	86	69	44	61	138	81	93	56	102
September ...	126	96	104	82	54	45	114	123	64	90	55	97
October ...	128	83	111	77	57	49	131	120	64	79	50	97
November ...	125	81	98	81	64	52	142	119	67	67	45	117
December ...	121	81	91	85	65	55	130	123	70	72	51	128

TABLE IV.

Monthly Index Numbers of Prices of Crops. 1927-1938.

Uncorrected for Seasonal Variation.

(Base 1927-29 = 100).

WHEAT.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January	91	95	109	97	76	78	49	44	45	50	73	81
February	94	100	107	102	70	80	48	44	45	53	69	81
March	98	106	109	107	69	—	50	43	45	52	75	78
April	96	114	115	111	73	—	50	44	45	51	76	75
May	103	—	114	110	73	—	50	42	45	49	76	76
June	—	—	—	—	—	—	46	47	45	51	75	82
July	—	—	—	—	—	—	46	48	45	51	76	80
August	—	—	—	—	—	55	45	46	41	62	79	45
September	91	—	—	—	—	56	45	45	44	64	82	47
October	92	—	103	91	—	54	44	45	46	67	84	48
November	92	97	101	89	77	50	43	45	47	69	83	48
December	92	97	100	82	76	50	44	45	47	71	83	47

WHEAT.

(Revised Index Numbers taking account of Payments under the Wheat Act).

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January	—	—	—	—	—	—	89	89	80	80	84	96
February	—	—	—	—	—	—	89	89	80	84	79	95
March	—	—	—	—	—	—	91	88	80	82	86	93
April	—	—	—	—	—	—	90	89	80	82	87	90
May	—	—	—	—	—	—	91	86	79	80	87	90
June	—	—	—	—	—	—	87	91	79	81	86	96
July	—	—	—	—	—	—	80	91	80	82	86	95
August	—	—	—	—	—	95	90	81	72	72	93	91*
September	—	—	—	—	—	97	89	80	74	74	100	92*
October	—	—	—	—	—	94	88	79	77	77	98	94*
November	—	—	—	—	—	91	88	80	78	79	97	94*
December	—	—	—	—	—	91	88	80	78	81	98	93*

* Provisional.

POTATOES.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January	105	105	80	67	113	228	48	54	71	127	123	70
February	103	104	82	57	112	197	46	52	64	130	118	68
March	103	128	90	33	115	191	41	43	52	115	121	64
April	104	172	85	44	146	199	39	51	56	115	134	77
May	130	182	76	43	138	171	44	58	83	106	158	114
June	128	164	64	42	181	138	40	59	95	85	159	144
July	143	146	61	38	193	87	32	66	70	74	146	145
August	96	112	88	91	210	61	65	125	115	86	92	89
September	98	100	88	89	166	56	58	91	90	97	88	86
October	100	88	73	92	160	53	64	87	75	105	81	81
November	98	85	76	82	148	49	65	76	71	107	75	73
December	99	81	78	85	170	54	60	70	104	116	75	79

OATS.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	85	105	100	78	69	98	57	57	68	62	77	90
February ...	87	111	104	76	72	97	56	68	68	63	84	93
March ...	93	124	112	80	73	103	57	72	68	64	87	94
April ...	97	134	116	84	84	102	56	70	67	67	98	94
May ...	98	144	110	94	89	104	57	69	71	67	104	93
June ...	113	146	105	92	92	103	61	66	73	67	106	93
July ...	115	140	107	91	97	104	63	69	73	68	100	96
August ...	115	137	114	91	101	100	64	73	74	67	115	97
September ...	97	106	93	73	94	69	51	68	65	78	87	73
October ...	95	91	83	69	75	62	52	68	64	70	85	64
November ...	96	97	80	69	99	62	52	68	64	69	85	66
December ...	102	99	79	69	102	60	55	68	62	71	86	69

HAY.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	80	86	116	98	79	67	71	66	70	75	81	76
February ...	75	86	133	100	77	68	71	62	71	82	86	78
March ...	71	89	137	94	75	68	75	63	70	84	91	74
April ...	80	98	132	87	74	75	75	67	72	85	94	76
May ...	86	106	131	84	77	76	76	67	71	81	93	77
June ...	84	111	130	87	82	72	77	73	74	84	96	81
July ...	91	122	125	93	83	75	74	67	74	88	103	81
August ...	88	108	103	80	78	72	67	60	66	90	95	81
September ...	86	110	104	80	72	69	65	63	66	88	88	78
October ...	89	104	100	83	69	69	68	68	65	86	79	73
November ...	86	109	100	82	67	71	67	70	67	83	78	75
December ...	87	113	98	78	67	70	66	70	71	81	82	75

OAT STRAW.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	92	81	131	107	85	86	75	72	75	85	96	91
February ...	86	83	144	104	86	83	77	65	82	96	100	93
March ...	77	93	143	94	87	81	81	61	81	99	104	93
April ...	77	103	126	91	84	86	79	60	77	95	108	88
May ...	80	87	119	88	83	84	75	62	72	89	102	86
June ...	77	86	119	81	81	83	72	59	67	83	98	84
July ...	76	88	112	91	89	78	78	62	67	88	100	79
August ...	78	91	127	89	87	82	71	60	68	92	101	86
September ...	79	89	122	97	93	82	74	68	73	91	94	90
October ...	80	87	110	86	90	77	76	67	73	88	90	88
November ...	77	103	107	86	86	77	73	70	76	91	90	89
December ...	73	113	107	85	85	75	71	72	78	95	92	87

FLAX.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	69	129	97	75	41	65	68	71	87	74	81	82
February ...	76	129	99	69	39	54	66	74	93	73	80	81
March ...	90	124	94	65	40	56	62	71	87	70	75	79
April ...	82	114	89	69	42	52	—	—	78	63	76	70
May ...	84	—	83	63	43	49	—	—	—	59	74	—
June ...	45	—	74	—	41	—	—	—	—	56	—	—
July ...	—	—	—	—	—	—	—	—	—	—	—	—
August ...	—	—	—	—	—	—	—	—	—	—	—	—
September ...	—	—	—	—	—	—	—	—	—	—	—	—
October ...	129	90	88	46	49	59	74	70	70	73	84	76
November ...	121	90	78	43	60	65	72	74	77	74	80	76
December ...	124	98	77	41	67	67	69	75	74	77	81	77

GRASS SEED: PERENNIAL.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	167	117	85	91	89	83	55	134	148	85	98	55
February ...	167	114	91	93	87	83	57	138	178	78	94	52
March ...	159	102	85	91	78	86	56	138	186	68	90	52
April ...	—	—	85	90	72	86	—	—	—	66	86	52
May ...	—	—	—	—	—	—	—	—	—	69	—	60
June ...	—	—	—	—	—	—	—	—	—	—	—	—
July ...	—	—	—	—	—	—	—	—	—	—	—	—
August ...	108	96	78	75	60	38	53	119	71	81	49	88
September ...	132	89	91	80	58	48	93	114	67	98	58	108
October ...	133	80	85	80	64	54	115	112	74	98	57	112
November ...	125	76	83	90	69	56	127	116	81	91	53	123
December ...	118	77	84	91	74	56	131	114	82	94	56	121

GRASS SEED: ITALIAN.

January ...	—	98	—	—	60	62	—	—	104	51	47	39
February ...	—	90	119	—	—	—	—	—	125	50	47	44
March ...	—	—	—	—	—	—	53	—	142	45	44	49
April ...	—	—	—	—	—	—	—	—	—	45	43	55
May ...	—	—	—	—	—	—	—	—	—	—	—	—
June ...	—	—	—	—	—	—	—	—	—	—	—	—
July ...	—	—	—	—	—	—	—	—	—	—	—	—
August ...	—	—	—	—	—	—	—	88	—	—	—	—
September ...	83	75	95	59	34	30	74	97	47	—	22	74
October ...	101	78	115	60	44	35	118	98	50	46	35	74
November ...	108	84	110	60	50	40	128	97	50	43	34	100
December ...	109	89	104	62	50	32	—	101	52	47	36	101

GRASS SEED: MIXED.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	—	110	82	—	66	50	47	125	112	58	67	44
February ...	—	111	96	—	68	49	—	—	182	—	77	44
March ...	—	—	97	—	—	—	—	—	—	66	—	—
April ...	—	—	—	—	—	—	—	—	—	—	—	—
May ...	—	—	—	—	—	—	—	—	—	—	—	—
June ...	—	—	—	—	—	—	—	—	—	—	—	—
July ...	—	—	—	—	—	—	—	—	—	—	—	—
August ...	—	105	—	—	—	—	—	125	47	—	—	—
September ...	109	93	105	76	44	37	133	119	58	75	46	75
October ...	115	79	109	71	50	42	128	117	56	68	43	75
November ...	111	75	104	72	54	46	135	116	58	59	41	86
December ...	108	74	109	67	51	49	129	114	57	64	44	93

GRASS SEED: ALL.

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	161	112	80	87	84	75	53	129	138	69	76	52
February ...	162	109	90	90	78	74	55	133	167	70	71	55
March ...	153	98	83	88	75	83	62	133	182	63	76	62
April ...	—	—	82	87	69	83	—	—	—	62	68	71
May ...	—	—	—	—	—	—	—	—	—	66	—	58
June ...	—	—	—	—	—	—	—	—	—	—	—	—
July ...	—	—	—	—	—	—	—	—	—	—	—	—
August ...	105	93	75	72	57	37	51	115	67	78	47	85
September ...	114	86	93	74	48	41	103	111	58	81	50	87
October ...	120	78	104	72	54	46	123	113	60	74	47	91
November ...	122	79	96	79	62	51	139	116	66	66	44	113
December ...	117	79	88	82	63	53	126	119	68	70	49	123

WHEAT.
(per Cwt.)

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
January ...	10 0	10 5	11 6	10 8	8 4	8 6	5 4	4 10	5 0	5 5	8 0	8 11
February ...	10 3	11 0	11 8	11 2	7 8	8 9	5 4	4 10	5 0	6 0	7 6	8 10
March ...	10 9	11 7	11 11	11 9	7 6	—	5 6	4 9	4 11	5 8	7 3	8 7
April ...	10 9	12 6	12 7	12 2	7 11	—	5 5	4 10	5 0	5 7	8 4	8 3
May ...	11 3	—	12 6	12 0	7 11	—	5 6	4 7	5 10	5 7	8 4	8 3
June ...	—	—	—	—	—	—	5 0	5 2	4 11	5 7	8 3	8 10
July ...	—	—	—	—	—	—	5 0	5 1	4 6	6 9	8 8	5 0
August ...	—	—	—	—	—	6 0	5 0	4 11	4 9	7 0	8 11	5 1
September ...	10 0	—	—	—	—	6 2	4 9	4 10	5 1	7 4	9 2	5 3
October ...	10 1	—	11 3	10 0	—	5 10	4 9	4 11	5 1	7 6	9 0	5 3
November ...	10 1	10 7	11 0	9 9	8 5	5 6	4 9	5 0	5 2	7 9	9 1	5 2
December ...	10 1	10 8	10 11	8 11	8 6	5 6	4 9	5 0	5 2	7 9	9 1	5 2
Calendar Year	10 3	11 0	11 6	10 5	8 1	5 10	4 10	4 11	5 0	6 10	8 7	5 8

POTATOES.
(per Cwt.)

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	s. 3	d. 7	s. 2	d. 9	s. 2	d. 3	s. 1	d. 7	s. 1	d. 10	s. 4	d. 2
February ...	3	6	3	6	2	9	3	10	2	5	4	2
March ...	3	6	4	4	3	1	10	6	8	4	5	0
April ...	3	6	5	10	2	11	1	6	1	9	4	1
May ...	4	5	6	2	7	1	6	4	8	5	5	4
June ...	4	4	5	7	2	2	1	5	6	2	3	7
July ...	4	10	4	11	2	1	3	6	7	2	11	1
August ...	3	3	3	9	2	10	3	1	7	1	2	1
September ...	3	4	3	5	3	0	3	0	5	7	3	0
October ...	3	5	3	0	2	6	3	1 $\frac{1}{2}$	5	5	2	9
November ...	3	4	2	11	2	7	2	9	5	0	2	7
December ...	3	4	2	9	2	8	2	11	5	9	2	8
Calendar Year	3	7	3	11	2	8	2	5	4	11 $\frac{1}{2}$	4	0 $\frac{1}{2}$
	3 5				2 5	4 11 $\frac{1}{2}$	4 0 $\frac{1}{2}$	1 10	2 5	2 7	3 9	2 10

OATS.
(per Cwt.)

[illegible]

[illegible]

OAT STRAW.
(per Ton).

[illegible]

FLAX.
(per Stone).

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	s. d. 8 6	s. d. 15 10	s. d. 12 10	s. d. 9 2	s. d. 4 11	s. d. 7 11	s. d. 8 4	s. d. 8 9	s. d. 10 7	s. d. 9 0	s. d. 9 10	s. d. 10 0
February ...	9 3	15 9	12 10	8 6	4 9	6 8	8 0	9 0	11 5	8 10	9 9	9 11
March ...	11 0	15 1	11 5	7 11	4 10	6 10	7 7	8 8	10 7	8 7	9 2	9 8
April ...	10 0	14 0	10 11	8 6	5 2	6 4	—	—	9 6	7 8	9 3	8 6
May ...	10 2	—	10 2	7 9	5 2	6 0	—	—	—	7 2	9 0	—
June ...	5 6	—	9 0	—	4 11	—	—	—	—	6 9	—	—
July ...	—	—	—	—	—	—	—	—	—	—	—	—
August ...	—	—	—	—	—	—	—	—	—	—	—	—
September ...	—	—	—	—	—	—	—	—	—	—	—	—
October ...	15 10	10 11	10 8	5 7	6 0	7 3	9 0	8 7	8 6	8 10	10 3	9 3
November ...	14 10	11 0	9 6	5 3	7 4	8 0	8 10	9 0	9 5	9 0	9 9	9 3
December ...	15 2	12 0	9 4	5 1	8 2	8 3	8 5	9 2	9 1	9 4	9 10	9 5
Calendar Year	11 11	13 10	10 11	7 11	5 1	7 2	8 5	8 11	9 11	8 9	9 9	9 8

GRASS SEED: PERENNIAL.
(per Cwt.)

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January	s. d. 27 11	s. d. 19 0	s. d. 14 3	s. d. 15 2	s. d. 14 11	s. d. 13 11	s. d. 9 3	s. d. 22 5	s. d. 24 8	s. d. 14 2	s. d. 16 4	s. d. 9 2
February	28 0	19 0	15 2	15 2	14 8	14 0	9 5	23 0	20 10	13 3	15 0	8 8
March	26 6	17 0	14 3	15 2	13 0	14 5	9 5	23 0	31 2	11 5	15 1	8 8
April	—	—	14 2	15 0	12 0	14 5	—	—	—	11 0	14 4	8 9
May	—	—	—	—	—	—	—	—	—	11 6	—	10 0
June	—	—	—	—	—	—	—	—	—	—	—	—
July	—	—	—	—	—	—	—	—	—	—	—	—
August	18 1	16 1	13 0	12 6	10 0	6 5	8 10	10 11	11 11	13 6	8 1	11 4
September	22 1	14 11	15 3	13 5	9 8	8 1	15 8	10 2	11 2	16 5	9 2	12 8
October	22 2	13 5	14 3	13 4	10 7	9 0	19 3	18 0	12 4	16 5	7 1	18 8
November	20 10	12 9	13 11	15 0	11 7	0 5	21 2	10 4	13 6	15 3	8 11	20 6
December	19 8	12 11	14 0	15 3	12 4	9 4	22 0	10 0	13 0	15 0	0 9	20 2
Calendar Year	21 9	14 0	14 5									
		16 9		13 10	10 10	9 2	18 4	19 2	14 0	15 6	10 1	18 4

GRASS SEED: ITALIAN.
(per Cwt.)

[illegible]

GRASS SEED: MIXED.
(per Cwt.)

Month	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January ...	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
February ...	—	17 7	13 0	—	10 6	8 0	7 6	20 0	17 10	9 4	10 7	7 0
March ...	—	17 8	15 3	—	10 10	7 10	—	—	29 0	—	12 4	7 0
April ...	—	—	15 6	—	—	—	—	—	—	10 6	—	—
May ...	—	—	—	—	—	—	—	—	—	—	—	—
June ...	—	—	—	—	—	—	—	—	—	—	—	—
July ...	—	—	—	—	—	—	—	—	—	—	—	—
August ...	—	16 9	—	—	—	—	—	—	—	—	—	—
September ...	17 4	14 10	16 8	12 2	7 1	6 0	21 2	19 0	9 2	11 11	7 4	12 0
October ...	18 5	12 7	17 5	11 3	7 11	6 9	20 5	18 8	9 0	10 11	6 10	11 11
November ...	17 8	11 11	16 7	11 6	8 8	7 3	21 5	18 5	9 2	9 6	6 6	13 8
December ...	17 3	11 9	17 5	10 9	8 2	7 9	20 7	18 2	9 2	10 3	6 11	14 10
Calendar Year	17 11	12 11	17 0	—	—	—	—	—	—	—	—	—
		15 11	—	11 7	7 10	6 8	20 8	18 9	9 2	10 8	6 11	12 0

NEW LIGHT ON THE RISK OF BREEDING FROM PULLETS.

The question as to whether or not breeding from pullets should be condemned has received conflicting answers. Some claim that pullet breeding can be practised successfully while others are most emphatic in condemning it on the grounds that it leads to the production of a non-vigorous strain, and increases mortality.

The evidence against the practice is considerably stronger than that which supports it, and there seems to be no doubt whatever that continued breeding from immature birds in successive generations will lead to disastrous results. Many poultry keepers have experienced the bad effects of this practice, and are now strong advocates of the policy of breeding only from birds which have proved their ability to lay and live throughout the pullet year.

While poultry keepers can argue from the results of their own experiences that it is unsound to breed from pullets, and no doubt will refrain from doing so on their own farms, there has not been available until recently any data from properly controlled breeding experiments which could be used to support the contention that breeding from pullets was a grave mistake. With the problem of increasing mortality confronting the industry, workers have been examining the possibility of certain factors, including immaturity, being responsible, either directly or indirectly for part at least of that problem, and the results of some investigations of the relationships between pullet breeding and mortality which are published by Pease of Cambridge, are of great importance and value.

These investigations began in 1935. In the initial enquiry it was found that there was a mortality of 50 per cent. amongst the chickens bred from pullets which died while in the breeding pen, whereas the percentage amongst those from pullets which lived was only 32 per cent. This finding suggested that the ability to live was inherited and was of such importance as to warrant further enquiry along similar and related lines.

In an enquiry carried out in 1936 the mortality amongst chickens hatched from hens was compared with that amongst chickens hatched from pullets. Further, the mortality in the flocks produced by the pullets which lived was compared with the mortality in the flocks produced by pullets which died

while in the breeding pen. And the investigation was taken a stage further to compare the mortality rates amongst the adults. The results are shown in the following table:—

Dams used	Percentage Mortality	
	Amongst Chicks ¹	Amongst Adults
Hens	37.8	23.4
Pullets which lived	39.8	23.8
Pullets which died	53.5	37.0

These results show that the mortality amongst the birds from the pullets which lived was approximately the same as it was amongst those from the hens, but was very much higher in the case of the birds bred from the pullets which died. If, therefore, a pullet lives throughout her pullet year the use of her as a breeder will not necessarily add to the mortality rate, but there is clear evidence that the mortality rate will be increased markedly if pullets which die early in life are used for breeding. There is thus a definite indication here that short life is an inherited character, and that the long life character is passed on by the female parent which possesses it. As it is impossible to tell at the beginning of the pullet year whether or not any particular pullet will live throughout that year, the wisdom of breeding only from hens which have shown their ability to live after passing through a testing year of laying is at once apparent. The advice to breed from hens and not from pullets is shown by this investigation to be sound.

Further sound reasons for not breeding from pullets are provided by the results obtained in other investigations. If pullets which have been hatched early in the year, and which have not moulted, are used as breeders, the eggs selected for hatching are usually those produced after the birds have been laying for some time; whereas if older birds are used it is likely that the eggs will be those laid soon after production is resumed after the autumn moult. Many poultry keepers have noted that chickens hatched early in the year are more vigorous and more easily reared than those from the same birds which are hatched later in the season, and this despite the fact that the weather later in the year should be more congenial to the birds than that in the early part of the year.

Light on this aspect of chicken rearing is provided by the results from one of the Cambridge researches. Flocks of chicks hatched in January, February and March from eggs laid in different parts of the laying cycle were reared and the rates of mortality determined. It was found that there was a mortality rate of 26 per cent. amongst chicks hatched from the first 20 eggs

after laying began, 30 per cent. amongst the chicks hatched from the next 20 eggs, and 40 per cent. amongst the chicks hatched from the next 20 eggs in the cycle. This shows that as laying proceeds there is a decreasing chance of obtaining chicks which will live, and that the first eggs laid after laying begins are the most likely to give chicks which will live. If, therefore, pullets which have been laying for a long time are used for breeding the chances of obtaining easily-reared chickens from their eggs are much less than they are in the case of birds which have only recently started to lay.

This investigation was taken one step further by comparing the mortality amongst chickens hatched from the 1st, 2nd and 3rd eggs, respectively, of each clutch in the laying cycle. In other words if a hen laid on each of three successive days, missed one or two days, and laid on each of the three following days, the chicks from the first egg of each clutch were reared in one unit, those from the second egg of each clutch in another unit, and those from the third in still another unit. The mortality rates were as follows :—

1st eggs of clutches	—38 per cent.
2nd " "	—43 "
3rd " "	—50 "

The important lessons taught by these investigations are :—

- (1) Longevity cannot be obtained from short-lived dams.
- (2) Pullets should not be used for breeding as it cannot be foretold whether or not they will live throughout the pullet year.
- (3) Eggs from birds which have been laying for some time are not so satisfactory for the production of chicks that will live as those near the beginning of the laying cycle.
- (4) The first eggs of clutches within the laying cycle are to be preferred to those produced later in the clutches.

PIGS MARKETING BOARD.

On the 17th September, 1938, the Minister of Agriculture, Sir Basil Brooke, appointed two members of the staff of the Ministry of Agriculture (Mr. A. Cope and Mr. J. F. McMullan) to enquire into and report upon :

- (1) the arrangements of the Pigs Marketing Board, Northern Ireland, in regard to the purchase and sale of pigs and the administrative and financial control of those arrangements ;
- (2) the general administrative and financial arrangements of the Board.

The Board had itself appointed five of its members in the summer of 1938 to investigate certain alleged irregularities made with regard to the method of disposal of casualty pigs, while further suggestions with regard to irregularities had been referred to the Secretary and Manager of the Board for report. The object of the Minister of Agriculture in arranging for an enquiry by members of the Ministry's staff was, therefore, to satisfy himself that the administrative organisation of the Board was satisfactory. Sir Basil Brooke felt himself compelled to take this step on account of his responsibility for the Pigs Marketing Scheme, which exists by virtue of an Order made by the Ministry of Agriculture.

The report of the investigating officers revealed a position which caused the Minister to be gravely perturbed, and which appeared to him to necessitate instant action in order to secure an immediate improvement in the administrative organisation of the Board.

Accordingly Sir Basil Brooke circulated a copy of the report to each member of the Pigs Marketing Board and invited them to meet him on Wednesday afternoon, the 22nd February, and asked them to submit to him proposals which would be adequate to secure an improved system of administration. Members of the Board were unwilling to submit any proposals for the improvement of the unsatisfactory arrangements which had been found to exist under the Board, and Sir Basil Brooke therefore asked members of the Board to agree to the following action:—

1. The dismissal of the present Secretary and Manager and the Accountant to the Board and the appointment, as a temporary measure, of two officers seconded from the Ministry of Agriculture, who would be instructed to prepare for submission to the Board proposals for the reorganisation of the Board's staff and for the proper control and supervision of the work.
2. The appointment of the Comptroller and Auditor-General as the Board's Auditor.

The Board asked for time until Monday, the 27th February, to consider these proposals. They then intimated to the Minister that they were unable to accept them, and in view of this failure on the part of the Board to co-operate with the Minister in securing an improved system of administration for the Pigs Marketing Scheme, Sir Basil Brooke was compelled to make an Order amending the Scheme by the removal of the present Board entrusted with its administration and the appointment of a new Board. The new Board consists of three members appointed by the Minister and two members chosen at a meeting on the 28th February, convened by the Ministry, of the elected members of the former Board. The names of the new Board are as follows, the names of the nominated members being given first:—

Sir Dudley E. B. McCorkell, M.B.E., D.L.,
Ballyarnett, Londonderry.

Col. John Patrick, M.P.,
Dunminning, Glarryford, Co. Antrim.

Major Malcolm Spier, M.C., L.M.S. Railway Company,
York Road, Belfast.

Mr. Samuel J. Crowe,
Drumwhinney House, Kesh, Co. Fermanagh.

Mr. James Graham, J.P.,
Derryane House, Derrylee, Co. Armagh.

The Minister of Agriculture regrets the necessity for the changes which he has had to make in the composition of the Board. His object has been to secure for pig producers, in whose interests the Pigs Marketing Scheme was introduced by his Ministry over five years ago, an efficient system of administration for the scheme. The monies entrusted to the Board for the administration of the scheme are provided by pig producers, and it is the opinion of the Minister that at least equal care should be exercised in the expenditure of those monies as applies in the public service. The enquiry which has been conducted on the Minister's behalf revealed serious laxity in the control and expenditure of the money obtained by the Board from pig producers. Indeed the position revealed by the enquiry has been of such a nature that one member of the staff of the Board has been arrested by the police authorities in Great Britain, and criminal proceedings have been instituted against him there. Sir Basil Brooke desired that members of the Board should have themselves taken action to remedy the state of affairs revealed by the Enquiry. Since members of the Board were unwilling to take this course the Minister was compelled to replace the existing Board by a body prepared to remedy the present unsatisfactory state of affairs by suitable action designed to secure for pig producers the best system of administration for the Pigs Marketing Scheme that can be devised, and a proper regard for the control and expenditure of the monies received from pig producers for the running of the Scheme.

The new Board held its first meeting on the 1st March, when Sir Dudley McCorkell was elected chairman, and adequate arrangements were made to ensure that the normal work of the Board will proceed smoothly and without delay.

Mr. W. C. Glover, M.B.E., and Mr. W. H. Long, of the Ministry's staff, have been appointed acting Secretary and Manager and Accountant to the Board respectively.

MARKETING SCHEMES.

AGRICULTURAL MARKETING (PIG INDUSTRY) ACT (N.I.) 1934.

PIG PRICES FOR MARCH, 1939.

The following announcement has been made by the Pig Industry Council for Northern Ireland.

PRICES FOR DEAD PIGS.

The prices per dead cwt. for dead pigs sold by producers to curers in Northern Ireland in March, 1939, are as follows:—

Weight Class. (Dead Weight)	Grade 1.	Grade 2.	Grade 3.	U.L. or U.F.	Partly Black Pigs.
c.1.0.21 to c.1.1.13	63/5	60/5	57/5	53/5	5/- below relevant Grade Price.
c.1.1.14 to c.1.2.3	67/5	64/5	61/5	57/5	
Weight Class. (dead Weight)	Grade A	Grade B	Grade C	U.L. or U.F.	
c.1.2.4 to c.1.2.14	67/5	64/5	61/5	58/5	
c.1.2.15 to c.1.3.14	67/5	64/5	61/5	58/5	
c.1.3.15 to c.2.0.0	64/5	61/5	58/5	55/5	
c.2.0.1 to c.2.0.14	58/5	55/5	52/5	49/5	

Pig Carcases c.1.0.0 to c.1.0.20—60/5

(N.B. These prices are 7d. per cwt. lower than those fixed for February, 1939).

Authorised cuts:—

- (a) Broken ham (dry, shank and/or shell bone break)—5% of the gross value of the carcase.
- (b) Broken ham (wet break)—12½% of the gross value of the carcase.
- (c) Shoulder-stuck carcase—3/- per shoulder affected.

The gross value of a carcase is the product of the dead weight and the relevant grade or other price per cwt.

When portion of a pig carcase is condemned on account of disease the existence of which could not reasonably have been known to the producer before despatch to the curer, the appropriate grade price (or fixed price if the carcase weighs not less than 1 cwt. 0 qr. 0 lb. and not more than 1 cwt. 0 qr. 20 lb.) shall apply. If the carcase is wholly condemned on account of disease

the existence of which could not reasonably have been known to the producer before despatch to the curer the relevant Grade 2 or Grade B price (or fixed price if the carcase weighs not less than 1 cwt. 0 qr. 0 lb. and not more than 1 cwt. 0 qr. 20 lb.) shall apply.

The foregoing prices do not apply in the case of (a) wholly black pigs, boars, rigs or stags, sucked sows, and pig carcasses weighing under c.1.0.0 or over c.2.0.14 and (b) pigs visibly diagnosable as diseased before despatch by the producer and subsequently condemned; emaciated or screw pigs; smelling pig carcasses with definite indications of putrefaction and pig carcasses badly abused or damaged before being handed over by the producer to the curer.

N.B.—The attention of producers and curers is directed to the fact that the Council have determined that the premium payable on Wiltshire pigs sold alive by producers to Wiltshire curers (on direct contract) or to the Pigs Marketing Board (Northern Ireland), shall be 5/- per cwt. dead weight as and from 1st March, 1939.

PRICES FOR PIGS SOLD ALIVE ON DIRECT CONTRACT TO WILTSHIRE CURERS IN NORTHERN IRELAND, AND FOR PIGS SOLD ALIVE TO THE PIGS MARKETING BOARD (NORTHERN IRELAND) AND RESOLD TO WILTSHIRE CURERS IN NORTHERN IRELAND.

In the case of pigs sold alive to Wiltshire curers under direct contract, or sold to the Pigs Marketing Board and resold to Wiltshire Curers, the prices per dead cwt. during March, 1939, are as follows:—

Weight Class (Dead Weight)	Grade 1.	Grade 2.	Grade 3.	U.L. or U.F.	Unsuitable.
c.1.0.21 to c.1.1.13	72/5	69/5	66/5	62/5	59/5
c.1.1.14 to c.1.2.3	72/5	69/5	66/5	62/5	59/5
	Grade A.	Grade B.	Grade C.	U.L. or U.F.	
c.1.2.4 to c.1.2.7	69/5	66/5	63/5	60/5	
c.1.0.0 to c.1.0.20	Suitable 61/5		Unsuitable 59/5		
Over c.1.2.7	On the same basis as pigs sold dead.				

(N.B. These prices are slightly lower than those fixed for February, 1939).

PRICES FOR PIGS SOLD ALIVE TO THE PIGS MARKETING BOARD (NORTHERN IRELAND) AND NOT RESOLD TO WILTSHIRE CURERS IN NORTHERN IRELAND.

In the case of pigs sold alive to the Pigs Marketing Board during March, 1939, and not resold to Wiltshire curers, the prices per live cwt., according to grade, are as follows:—

Live Weight.	Grade 1.	Grade 2.	Grade 3.		Unsuitable.
c.1.1.14 to c.1.2.13	46/-	46/-	46/-		44/6
c.1.2.14 to c.2.0.0	54/3	52/-	49/9	U.L. or U.F. 46/9	44/6
c.2.0.1 to c.2.1.14	47/6	45/3	43/-		40/9
c.2.1.15 to c.2.2.7	45/3	43/-	40/9		38/6
c.2.2.8 to c.2.2.21	40/9	38/6	36/3		34/-

These prices do not apply to live pigs under c.1.1.14 or over c.2.2.21, live pigs intended for breeding, live boars, live sucked sows, rigs or stags, injured or diseased pigs, live in-pig gilts, or live pigs sold (on contract, registered with the Pig Industry Council) to curers in Northern Ireland. All other live pigs inside the weights c.1.2.0 to c.2.2.21 can be sold only to the Board.

AUTHORISED DEDUCTIONS.

Every pig (dead or alive) sold to a curer or to the Pigs Marketing Board is subject to a levy at present amounting to 4/6.

In addition to this amount, a deduction of 4d. per pig may be made in the case of sales to curers or to the Board (on pigs resold to curers in Northern Ireland) to cover insurance, so that the producer will not suffer financial loss if the carcase is condemned as unfit for human consumption.

GRADING STATISTICS.

Table showing the percentages of pig carcasses falling within the weight and grade classes indicated during December, 1938.

Under c.1.0.21		c.1.0.21 to c.1.1.13					c.1.1.14 to c.1.2.3.					Totals
Suitable	Un-suitable	Grade 1	Grade 2	Grade 3	U.L. & U.F.	U.	Grade 1	Grade 2	Grade 3	U.L. & U.F.	U.	
1.02	.19	2.02	1.16	.37	.14	.02	4.43	4.44	1.95	.92	.04	16.70

Grade A.				Grade B.				Grade C.				
1	2	3	4	1	2	3	4	1	2	3	4	
7.84	21.96	5.10	1.23	5.25	19.19	5.95	2.29	1.51	6.89	1.72	.52	79.44

Ungraded Carcasses						
Under Grade A measurements. U.L.	Over Grade C measurements U.F.	Wholly condemned U1.	Wholly black, injured or damaged U2.	Overweights, boars, sows, etc. X.	Partly Black Y.	
.05	1.57	.05	.57	1.59	.02	3.85
					Total	100%

These figures have been calculated from the purchase and grading statements which the curers furnish to the Ministry.

The volume of trade in pig carcasses showed a further reduction last month. The weighted average price per cwt. was 1/8d. lower at £3 2s. 8d. The average weight fell 2 lbs. to c.1.2.24, and the average price per carcass cheapened by 4/- to £5 7s. 6d.

The following table gives the percentage results of an analysis of the purchase and grading statements furnished by Wiltshire Bacon Curers in respect of live pigs delivered on direct contract by producers during the month of January, 1939.

Weight Class.	Grade 1.	Grade 2.	Grade 3.	Unsuitable U.L. or U.F.	Total
Under c.1.0.0					.12
c.1.0.0 to c.1.0.20					.78
c.1.0.21 to c.1.2.3	50.27	28.88	6.04	2.22	87.41
	Grade A.	Grade B.	Grade C.		
c.1.2.4 to c.1.2.7	2.83	2.22	.60	.08	5.73
c.1.2.8 to c.1.3.14	1.91	2.57	1.17	.27	5.92
Over c.1.3.14.					.04
				Total	100 %

The average net price per cwt. in respect of these deliveries works out at £3 7s. 9½d., after making allowance for insurance and contribution to the Pigs Marketing Board.

The average weight works out at c.1.1.20, the net average price per pig being £4 17s. 0d.

COST OF STANDARD PIG RATION.

The average retail cash price per cwt. of the standard ration for the sixteen weeks' period ended 18th February, 1939, was 8/8¼d. The average price for

the similar period ended 21st January, was 8/9 $\frac{1}{4}$ d. These figures have been calculated by the Ministry from returns collected from ten representative centres in Northern Ireland.

The following is the ration upon which the feeding cost is based :—

Maize Meal	...	...	...	30%
Barley Meal	...	...	...	30%
White Pollards	...	...	...	20%
White Bran	...	...	...	10%
Meat Meal (60% Protein)	...	...	...	10%

THE CATTLE INDUSTRY (EMERGENCY PROVISIONS ACTS, 1934 AND 1935 AND THE LIVESTOCK INDUSTRY ACT, 1937.

The following is a summary made under these Acts up to and including 25th February, 1939 :—

Live Weight		No. of Animals	Total Amount Paid		
			£	s.	d.
England and Wales	...	4,910,972	12,112,437	3	0
Scotland	...	1,495,001	3,922,807	3	9
Northern Ireland	...	509,770	1,087,116	10	7
TOTAL (United Kingdom)	...	6,915,743	17,122,360	17	4
Dead Weight		No. of Animals	Total Amount Paid		
			£	s.	d.
England and Wales	...	150,871	378,791	17	3
Scotland	...	46,371	135,323	11	7
TOTAL (Great Britain)	...	197,242	514,115	8	10

NUMBERS OF FAT CATTLE CERTIFIED FOR SUBSIDY.

The numbers of fat cattle certified for payment of subsidy, as published by the Livestock Commission in respect of the month of January, 1939, are shown hereunder :—

	January, 1939					Corresponding totals in	
	Home-bred		Imported		Total	Jan., 1938	Jan., 1937
	Ordinary Grade	Quality Grade	Ordinary Grade	Quality Grade			
England	25,999	40,777	6,840	20,713	94,329	86,266	91,386
Wales	4,516	4,833	81	342	9,772	7,810	9,086
Scotland	2,135	16,318	733	11,082	30,268	29,744	29,448
Northern Ireland	6,998	2,990	774	565	11,327	9,196	12,383
United Kingdom	39,648	64,918	8,428	32,702	145,696	133,016	142,303

As the great majority of fat stock markets are held on the early days of the week the rate of marketing of fat cattle cannot be judged accurately from the number of animals marketed in a calendar month. For comparative purposes, appropriate weights are applied by the Livestock Commission to each day of the week, and the figures for each calendar month are adjusted accordingly, so as to allow as far as possible for the fact that a large number of markets are held on Mondays, and that the number of markets held decreases day by day as the week proceeds. The adjusted figures for January, 1939, 1938 and 1937, are 136,139, 130,575 and 149,218 respectively.

The average prices per live cwt. of certified cattle in January, 1939, have been :—

	January 1939						Corresponding Averages in			
	Ordinary Grade		Quality Grade		Average		January, 1938		January, 1937	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
England and Wales	36	2	39	10	38	7	43	0	34	7
Scotland ...	38	7	42	1	41	9	44	9	37	9
Northern Ireland ...	34	7	35	7	34	11	40	9	32	2
United Kingdom ...	36	1	40	4	39	1	43	4	35	2

AGRICULTURAL NOTES.

SEASONAL FARM NOTES.

It is desirable that the planting and sowing of crops should be completed as early in spring as possible, but it is not advisable to work the ground while it is in an unsuitable condition, for if this is done maximum crop yields will not be obtained. The best use, therefore, should be made of every opportunity of favourable weather and soil conditions to push on the work of ploughing, harrowing, sowing and planting.

WHEAT.—In Northern Ireland the most satisfactory yields of wheat are obtained from autumn-sown varieties. In many cases, however, it was not possible to sow such varieties last autumn, due to the unfavourable weather conditions, and farmers, therefore, may desire to sow some wheat in spring. It is essential to sow only spring varieties in spring, and to do so early. The sowing should, if at all possible, be completed before the end of March. Red Marvel and Red Fife are two spring varieties which have produced quite good yields of grain in Northern Ireland. If sowing cannot be carried out before April then a suitable variety to use is April Spring Bearded, which ripens fairly quickly.

In order to obtain a good healthy growth of wheat the seed should be treated with "Ceresan", "Agrosan G", or "Abavit" before it is sown. These preparations can be obtained from local merchants, and instructions with regard to the correct method of treating the seed with them will be found on the package.

BARLEY.—Barley has become of considerable importance in the economy of Northern Ireland farming, due to the large quantities of barley meal used in pig feeding. It would be of great advantage to this country if the money which leaves it each year for barley were spent in growing the crop at home. Experiments have shown that very satisfactory crops of barley can be grown in Northern Ireland and, where the soil is suitable and not in need of lime, this crop is no more difficult to grow than wheat or oats; in fact it can be grown successfully on land which would not produce a good crop of wheat. Varieties such as Spratt-Archer and Old Common (Chevalier) can be depended upon to produce satisfactory yields on average soils in Northern Ireland. Spratt-Archer is a strong strawed variety and is consequently suitable for growing on the richer types of soil where there is risk of lodging. Old Common produces a longer straw, and is more suitable than Spratt-Archer for lighter soils.

One point which should be borne in mind in connection with barley growing is that barley will not grow well on sour soils, and if it is intended to grow this crop on a field which has not been limed recently, advantage should be taken of the Land Fertility Scheme to obtain lime at half the usual price. From 25 to 30 cwt. of burnt lime should be applied to each statute acre. Barley is a good nurse crop and may be grown just before the land is put down to grass. If this is done the lime should be applied after the ground has been ploughed for the last time, but from 2 to 3 weeks before it is intended to sow the barley and grass-seeds.

The most suitable soils for barley are light loams and well drained medium loams. The seed should be sown as early in March as possible in order to have the crop ripened during the normal harvest season. To prevent attacks of diseases such as "smut", "leaf stripe", etc., the seed should be treated with "Ceresan", "Agrosan G" or "Abavit". Full particulars with regard to the correct method of using these preparations will be found on the package.

The quantity of seed required depends on whether or not a seed drill is being used. If sown with a corn drill, from 12 to 14 stones of seed per statute acre will be sufficient, but if the seed is broadcast about 16 stones per acre will be necessary. Artificial manures are not usually required for the barley crop if it is grown after a root crop such as potatoes. If, however, it is grown after another cereal crop such as oats, then it is recommended that the following manurial mixture be applied at the rate of from 2 to 3 cwt. per statute acre:—

1 cwt. sulphate of ammonia.
3 cwt. superphosphate.
1 cwt. 30 per cent. potash salts.

Farmers who intend to grow barley for the first time would be well advised to invite the Agricultural Instructor for the district to visit and discuss the various points in connection with this crop before making final arrangements.

OATS.—The importance of early sowing, especially where lodging is feared, cannot be over-emphasised. While a good crop of oats is desirable a lodged crop is highly undesirable, for this will likely prevent the use of a binder, and sometimes even of a reaper in harvesting the crop. In addition to early sowing, lodging may be prevented to some extent by the judicious use of potassic and phosphate manures, but omitting nitrogenous manure. For oats on lea ground in poor condition the following mixture of artificials may be applied to each statute acre:—

1 cwt. sulphate of ammonia.
2 cwt. superphosphate
1 cwt. 30 per cent. potash salts

This mixture, omitting the Sulphate of Ammonia, applied at the rate of 3 cwt. per acre is suitable for oats grown after wild white clover lea or on other land where lodging of the crop is feared. Nitrogen encourages the production of soft straw which lodges easily, while phosphates and potash tend to neutralise this effect and balance the stores of nitrogen in the over-rich soils, thus aiding in obtaining a full crop.

Stocks of oats should be changed regularly by purchasing fresh supplies of seed from a good grain growing district. Farmers who have good rich soil should sow varieties such as Crown or Stormont Arrow, which have been shown by experiment and by general experience to produce heavy yields of grain when grown on the better classes of soils. Particulars of the results of oat variety trials carried out in Northern Ireland are given in Leaflet No. 44, the revised edition of which will be available soon, and contains the results of the trials conducted by the Agricultural Instructors in 1938.

As recommended in the cases of wheat and barley, seed oats should also be treated with a fungicide such as "Ceresan", "Agrosan G" or "Abavit" to prevent attacks of such seed borne diseases as smut and leaf stripe. It is particularly necessary to dress the seed this season, as it has been observed that these diseases are usually prevalent in a season following a bad harvest. It is also important this year to have samples of seed oats tested for germination. This will be done by the Ministry at a cost of 3d. per sample. The Agricultural Instructor for the district should be consulted with regard to obtaining supplies of seed, and also on other problems connected with the growing of this and other farm crops.

POTATOES.—Early varieties of potatoes may be planted as soon as the ground can be made ready. Particulars of the potato variety trials were given in last month's report, and are also described in detail in Leaflet No. 44. Farmers who wish to compare the productive capacity of the newer varieties with that of the better known varieties should read this Leaflet. The seed of main crop varieties should now be in sprouting boxes and exposed as much as possible to sunlight. An occasional inspection of the seed should be made on wet days when it is not possible to do other work, and any tubers which are diseased or which, from the colour of the bud appear to belong to another variety, should be removed. Any boxes in partial darkness due to their position should be moved into a better lighted position.

Farmyard manure should be applied to potatoes at the rate of from 15 to 20 tons per statute acre. In addition to this, a mixture of artificial manures consisting of:—

- 1 cwt. sulphate of ammonia
- 4 cwt. superphosphate
- 1 cwt. muriate of potash

should be applied to each statute acre. For early potatoes, or where farmyard manure is not available for the maincrop varieties, the above mixture

may be applied at the rate of 9 cwt. per statute acre. In cases where the farmyard manure consists mainly of pig manure, or where from experience it is known that the above manurial mixture tends to produce long rank tops, it will be found that a shorter, sturdier top will be obtained if the amount of sulphate of ammonia is reduced or even, in some cases, dispensed with altogether.

The tops are also usually shorter when the farmyard manure is ploughed into the ground during winter or early spring instead of being put in the drills. This practice also helps to spread the work better over the season, and thus reduces the rush of work in spring.

HAY.—Fields intended for hay should not be grazed after the end of March. Some manurial treatment is usually necessary to obtain a maximum crop of hay, and where liquid manure is available it makes a very suitable dressing for this purpose. Liquid manure may be applied to hay at the rate of from 6 to 10 tons (1,350 to 2,250 gallons) per acre, and in addition an application of a mixture of—

1 cwt. superphosphate
2 cwt. 30 per cent. potash salts

may be applied, except in cases where a dressing of phosphatic manure was applied in autumn, when 2 cwt. of 30 per cent. potash salts will be sufficient.

Any loose stones or sticks which may be on the hay fields should be gathered off and the fields rolled.

PASTURE.—Grassland which was harrowed and manured last autumn should now be rolled to level the ground and to consolidate the soil. In the case of pastures to which burnt lime was applied, a run of the chain harrow will aid in spreading any lumps of lime which have slaked since spreading was done, or which were too wet to spread evenly.

EARLY GRASS.—Early growth in grass may be stimulated by the application of about 1 cwt. of sulphate of ammonia or of nitro-chalk per statute acre. Such dressing will be particularly effective in cases where a phosphatic manure was applied during last autumn.

If no phosphatic manure was applied in autumn it would be advisable to apply a dressing of from 3 to 5 cwt. of superphosphate, or semsol, to the grassland in early spring to stimulate the growth of clovers. A dressing of from 2 to 3 cwt. of 30 per cent. potash salts along with the phosphate may also be applied to lighter classes of soils with a beneficial effect.

SEEDS MIXTURES.—Careful attention should be given to the selection of a seeds mixture for laying out land to pasture, since the ultimate type of grazing produced depends to a great extent on the composition of the mixture used. A good seeds mixture need not be very expensive, but it is important that all

the seeds used should be of first quality. In order to protect farmers against the purchase of inferior seeds the Ministry undertakes to test samples of seed for them at the Seed Testing Station for the nominal fee of 3d. per sample. Samples should be forwarded in special envelopes which are supplied free, on request. Full particulars of points to keep in mind when preparing a seeds mixture and of mixtures suitable to Northern Ireland conditions, are given in Leaflet No. 40 and on page 697 of this report.

SILAGE.—This is a nutritious, succulent food, obtained when green crops are stored under certain conditions. A mixture of oats, beans and vetches is usually grown for silage, but grass may also be used, although the making of grass silage requires more care and experience than the former if success is to be attained.

Silage may be used to replace part of the ration of roots given to cattle, and also part of the hay and concentrates. The production of silage is very useful in districts where the root crop is uncertain, where it is difficult to obtain labour to handle the root crop, or where the seasons are such that it is difficult to harvest the hay crop. The seeds mixture for silage may be sown either in autumn or in spring. The crop is usually cut and put in the silo in July or August.

The tower silo is the most convenient type of silo to use, but owing to the cost of such a silo it is not very suitable for smaller farms. Very good silage can, however, be made in a pit silo which can be made very cheaply by excavating a pit and lining it with concrete.

The following seeds mixtures per statute acre are suitable for the production of material for silage.

(a) For light land—

9	stones	oats.
10	"	beans.
4	"	vetches.

(b) For heavy land—

14	stones	oats.
13½	"	beans.
2	"	vetches.
2½	"	peas.

Farmers who are interested in silage, and who have no experience of its preparation, should discuss the matter with the Agricultural Instructor for the district.

SEASONAL LIVESTOCK NOTES.

Ox-WARBLE FLY.—In accordance with the Ox-Warble Fly Order all cattle infested with the maggots of the ox-warble fly must be treated with a dressing of an approved derris-root preparation between the 15th and 22nd days of March, and continued at intervals of 28 days until the parasites no longer appear. All cattle owners should co-operate in an effort to destroy this pest

which costs farmers many hundreds of pounds each year. Failure to destroy the maggots may lead to a prosecution, and farmers are warned that the provisions of this Order will be enforced more strictly in future.

The following derris-root preparations, which have been tested in trials in Northern Ireland, are recommended by the Ministry for dressing cattle this year:—"Arnold's Warble Fly Powder", "B.D.H. Anti-Warble Fly Powder", "Blue Cross Warble Fly Powder", "Bugge's Warble Fly Dressing", "Cooper's Warble Fly Powder", "Cooper's Polvo", "Cowboy Derris Powder", "Evan's Warble Fly Powder", "Gad-Ex" (Day, Son & Hewitt, Ltd.), "Hayward's Warble Fly Remedy", "Tennant's Paragad", "Pinkstone Warble Fly Powder", "Plough Brand Warble Fly Powder", "Summer's Warble Fly Powder", "Warblo" (Osmonds), "Warflix" (Pan Britannica Industries, Ltd.), "Young's Warble Fly Powder". These preparations are on the market and can be purchased locally.

Cattle owners who may be offered preparations other than any of those in the above list should make an effort to obtain one of the recommended preparations, as the success of the dressing depends on the efficiency of the dressing used, as well as on the thorough application of the wash at the correct times. The directions for mixing the wash properly will be found on the package, and should be followed faithfully. Further information relating to the Order is given in Circular No. 13, while particulars regarding the preparation and application of washes are given in Leaflet No. 64.

CALF REARING.—It will be necessary to provide suitable housing for calves which will be arriving in increasing numbers from now onwards. In addition to judicious selection of parent stock, successful calf rearing also depends on special care being given to the calves at birth, and in the early stages of their growth.

It is essential that the young calf should be born in clean surroundings, and that it should be kept in a clean, dry, well-lighted and well-ventilated house. It is a good practice to paint the navel cord of all calves at birth with tincture of iodine as a precaution against white scour, joint ill and other infection (Read Leaflet No. 82—White Scour in Calves).

FEEDING OF CALVES.—Experience has shown that the most satisfactory food for calves during the first four weeks is whole milk. After the calves are four weeks old, however, the whole milk may be gradually replaced with separated milk and small quantities of meals given after the milk. If supplies of skim milk or separated milk are limited, satisfactory results can be obtained by the use of certain meal mixtures particulars of which, along with useful information on the subject of calf rearing generally, are given in Leaflet No. 54.

There is no need to purchase expensive meal mixtures for calves, as very satisfactory mixtures can be prepared on the farm quite cheaply.

Farmers are once again warned not to succumb to the wiles of clever travelling agents who make fantastic claims in respect of special foods, condiments and tonics, including calf rearing mixtures, which they offer at exorbitant prices. Such commodities are not necessary, and to use them is merely increasing the cost of feeding which, even with the use of the common foods recommended, is sufficiently high.

DISHORNING OF CALVES.—All calves intended for beef or stores should be dishorned before they are nine days old, as hornless stores command better prices than those with horns, and if being fattened at home they can be fed with less risk of injuring each other. The young horns can be easily and cheaply removed by the use of caustic potash. Full particulars regarding this operation are given in Leaflet No. 5.

SHEEP.—Close attention should be given to the breeding flock during the lambing season. This will prevent the possibility of heavy losses through such things as sheep being unable to lamb unaided, sheep lying on their backs and being unable to rise before being smothered, young lambs falling into small open drains and being unable to get out, lambs becoming victims of exposure to severe weather, or lambs not being suckled by their dams. Ewes due to lamb should be put in a fresh, clean field near the farmstead, so that regular attention can conveniently be given to them. While it is desirable that a ewe should be allowed to lamb by herself if possible, in some cases assistance may be necessary. The person giving such assistance should first wash the hands thoroughly in warm water, using soap and a good disinfectant. Raw linseed oil should be used on the hands as a lubricant.

Further information on the care and management of sheep is given in Leaflets No. 47 and 63.

SEASONAL GARDEN AND ORCHARD NOTES.

The next few weeks should be one of the busiest periods of the year in the vegetable garden, and to a large extent the success of the season's work will depend on the correct timing of sowing the seeds, transplanting and thinning the plants, etc. If the soil was dug early in the winter it should break down readily when dry, and be easily prepared for sowing.

VEGETABLES.—As soon as soil and weather conditions permit, seeds of broad beans, peas, parsnips, parsley, onions, lettuce and garden turnips should be sown in ground where the crops are to mature. The main sowings of seeds of cabbage, cauliflower, broccoli, borecole, Brussels sprouts, savoy cabbage and leeks, should be made in lines towards the end of March or early in April, to obtain plants for planting out later in positions where they will mature.

SEEDS of cucumbers for growing in cold frames, and of vegetable marrows and celery, should be sown during March or April in a greenhouse or hot frame.

CABBAGE.—Cabbage planted last autumn should receive at least two more dressings of nitrate of soda during the next couple of weeks. Apply the manure at the rate of 3 cwt. per acre at intervals of from 10 to 14 days. The plants should be lightly moulded up after each dressing.

ONIONS.—Onions sown last August and wintered in the seed bed should be planted out now in deeply dug and well manured soil. Care must be taken not to plant too deeply, and to make the roots firm.

CELERY.—The trench for celery may be prepared now, and the soil that is thrown out to both sides may be cropped with lettuce or radish.

APPLE TREES.—Apple trees which were attacked last season by capsid bugs should be sprayed with a suitable petroleum wash when the buds begin to burst. Petroleum washes are liable to damage the buds if applied after the young leaves unfold from the buds, but on the other hand they will not be fully effective if they are applied too early. The correct timing of application is, therefore, important. Thorough spraying is essential if satisfactory results are to be obtained. Further particulars regarding the control of capsid bugs are given in Leaflet No. 10.

APPLE SCAB DISEASE.—Supplies of hydrated lime and of bluestone for the preparation of washes to be applied for the prevention of apple scab disease should be obtained now, so that there may be no delay when the time for the application of the spray arrives. Details regarding the spraying of apple trees are given in Leaflet No. 33.

FLOWERS.—Seeds of hardy annuals such as sweet pea, clarkia, godetia, shirley poppy, nasturtiums, etc., may be sown out-of-doors early in April. Early flowering chrysanthemums may be planted out in deeply dug and moderately manured soil early in April. Bush rose trees should be pruned during the last week of March or early in April.

GENERAL.—Hoe the ground between the rows of seedlings in the vegetable garden and between the fruit bushes, as this will assist growth and keep down weeds.

SEASONAL POULTRY-KEEPING NOTES.

HATCHING.—Hatching of eggs from breeds such as Rhode Island Red, White Wyandotte and Light Sussex should be completed as soon as possible where the aim is to have pullets which will start laying next autumn. Pullets of these breeds hatched after March are seldom profitable, and apart from

this it has often been observed that chickens hatched from eggs laid by hens towards the end of the laying period are less vigorous and more liable to die than those hatched from eggs laid at the beginning of the season. See article on page 677. If it is necessary to hatch pullets now for laying next autumn, eggs from light breeds such as the White Leghorn should be used, as pullets of these breeds mature more rapidly and may be expected to lay at an earlier age than those of the heavy breeds.

Ducks for winter egg production or for table purposes may now be hatched. For egg production the most suitable breeds are the Khaki-Campbell and the Indian Runner, while for the production of table ducklings Aylesbury and Pekin, or a cross between these breeds, are satisfactory. Instructions with regard to the hatching of duck eggs are supplied with most makes of incubator. It should be noted that more moisture is required for duck eggs than for hen eggs, and a slightly higher temperature.

BROODER SPACE FOR CHICKS.—The overcrowding of chicks in brooders will cause a high mortality amongst the chicks and will impair the health and vigour of those that survive. It will be necessary as the birds grow older to change them into larger houses, and a wire run should be placed beside the house so that the chicks may be allowed out on fresh, clean grass during warm sunny days.

SEPARATION OF THE SEXES.—It is very important, if poultry keeping is to be successful, that the pullets should be separated from the cockerels as soon as they can be distinguished. The cockerels should be penned and fattened off as soon as possible, since the price obtainable for fat chickens usually decreases as the season advances. A suitable mash for fattening cockerels may be prepared by mixing—

1	part by weight	maize meal.
1	"	" pollard.
1	"	" Sussex ground oats.

and wetting this mixture with separated milk or buttermilk.

The pullets, on the other hand, must not be fattened but should be allowed to grow and form muscle and bone at a normal rate. The rations to be fed to pullets should be of a non-fattening nature. Examples of such mashes are given in Leaflet No. 20. When the pullets have been separated from the cockerels they should be put on to fresh grass. Suitable portable houses which can be moved about easily should be provided, as frequent changes to fresh ground are essential to the well-being of the birds, enabling them to build up strong, sturdy bodies and constitutions, thus aiding greatly in preventing attacks of disease. Houses with slatted floors are probably the most suitable, as they provide excellent ventilation, are very hygienic, and will accommodate more birds than a solid floor house of similar size.

CULLING OF LAYING FLOCKS.—As the price obtained for eggs generally decreases from now onwards till the summer, an economy can be effected by culling the laying flock and removing birds which will not be suitable for breeding purposes next season. A reasonably good price can usually be obtained for the culls provided that they are fed liberally on a fattening mash for a few weeks before being disposed of.

Useful notes on the culling of flocks are given in Leaflets No. 2 and 29, while information on the care and management of birds retained for breeding purposes is given in Leaflet No. 83.

TURKEYS.—Turkey hens should be fed on a good laying mash from now onwards to encourage egg production. To avoid loss of eggs through inability to locate the turkey's nest it would be a good plan to provide a nest for the turkey in a hedge or bank where some natural cover is present. The turkey will lay in a quiet out-of-the-way place, and this should be kept in mind when providing a nest.

Ordinary hens of the heavy breeds will usually hatch and rear turkeys quite satisfactorily, provided that a hen is given only as many eggs as she can cover comfortably. It is better to set the turkey eggs under broody hens than to collect and store them until the turkey becomes broody.

The services of a superior type of turkey cock can be obtained at a County Turkey Station for a nominal fee. Owners of turkey hens should obtain a list of the names and addresses of these stations from the Secretary, or Agricultural Organiser, of the County Committee of Agriculture.

Further information on the hatching and rearing of turkeys is given in Leaflet No. 37.

MARKETING OF EGGS.—Attention is again directed to the importance of keeping eggs clean, and thus avoiding the trouble of cleaning them or of running the risk of being "cut" in the price when they are sold. The simple hints mentioned in Leaflet No. 27, for the keeping of eggs clean, can be practised by all poultry keepers, and those who have not read that leaflet should obtain a copy and carry out the advice it gives.

SEEDS MIXTURES FOR HAY AND PASTURE.

Farmers will be considering now the purchase of grass and clover seeds for sowing land down to temporary pasture. Unfortunately, in the past, the important matter of seeds mixtures was not given the attention it deserved, and the result of this failure to appreciate the absolute necessity to sow a suitable mixture of grasses and clovers, if a good pasture is to be obtained, is seen in the many poor, thin, weedy pastures which are prevalent throughout the country.

It is feared that many farmers regard temporary pasture as being of secondary consideration and are, therefore, concerned chiefly with the prospect of getting good crops of hay and, perhaps, of ryegrass seed. The object of getting good hay crops is not opposed to the production of good pastures, provided the principles underlying the production of both are understood and adopted. It is far easier to produce a good crop of hay than to produce a good pasture, but the production of good pasture need not necessarily mean the failure to obtain a good crop of hay or of ryegrass seed.

Temporary pasture is a crop which occupies the ground for three, four, or more years. This being so, it should be the aim and object of every farmer, when laying land down to pasture, to do everything possible to ensure that this crop shall be a good one; besides, the quality of the pasture at the time the field is again ploughed for a rotation of crops will influence for good or bad the yields of these crops. This, in itself, should be sufficient justification for the little extra expense involved in the purchase of suitable mixtures of seeds. It is well-known, for example, that pastures containing wild white clover not only provide more and better grazing for stock than those which do not, but such fields, when ploughed up again, produce superior yields of crops, and do not normally require so much nitrogenous manure as those in which wild white clover was absent, or poorly represented. It is seen, therefore, that a suitable seeds mixture may, indirectly, save expense in the purchase of manures later.

Probably the most frequent mistake made in the composition of seeds mixtures is the omission of seeds of species of permanent grasses and clovers. The ryegrasses are not permanent. Italian ryegrass is very short-lived, and while these produce good crops of hay, they cannot be depended on to form good pastures. Of the permanent species of grasses, cocksfoot, timothy, rough-stalked meadow grass, and meadow fescue, are the most useful; while of the clovers, wild white clover is truly permanent, and red and alsike clovers short-lived. The permanent species of grasses do not form seed in the first year, as do the ryegrasses, and, accordingly, their inclusion in a mixture where it is proposed to save perennial ryegrass seed will not interfere with the purity of the sample of that seed. Where Italian ryegrass seed is saved, it is not usual to leave the land in pasture afterwards, but to plough it up again for another crop.

It is impossible to prescribe a mixture of seeds to suit all soils and conditions, but some general rules may be laid down.

- (1) Do not sow ryegrasses in excess.
- (2) Include an adequate proportion of permanent grasses, particularly cocksfoot.
- (3) Include wild white clover.

- (4) Do not sow "complicated" mixtures. Simple mixtures of carefully chosen strains of a few species are much to be preferred.
- (5) Do not sow mixtures of unknown composition.

The following mixtures should be regarded as types only, and will serve as a guide.

FOR ONE YEAR'S HAY AND TWO OR MORE YEARS' GRAZING
(SEED NOT SAVED).

POUNDS PER STATUTE ACRE.

Species	Average Soils	Cold Clay Soils	Peat Soils	Poor thin Soils
Perennial Ryegrass— Irish or Scottish	12-15	18	14	20
Italian Ryegrass— Irish	5- 7	—	5	—
Cocksfoot— Danish	8-10	6	5	10
Timothy— Canadian or Scottish	4- 5	8	6	—
Rough-stalked Meadow Grass— American	1	3	2	2
Crested Dogtail— Irish	—	—	3	3
Red Clover— English Broad	1	—	—	—
Montgomery, Cornish Marl or English late-flowering	1	—	—	1
Alsike Clover— Canadian	1	2	2	1
Wild White Clover— Kentish	1	1	1	1
Total (lb. per statute acre)	34-42	38	38	38

FOR ONE YEAR'S HAY AND TWO OR MORE YEARS' GRAZING on MEDIUM
SOILS (PERENNIAL RYEGRASS SEED SAVED).

1½ to 1½ bushels—35 to 42 lb. Perennial Ryegrass
8 „ Cocksfoot
3 „ Timothy
½ „ Broad Red Clover
½ „ Late-flowering Red Clover
1 „ Wild White Clover.

Total 48 to 55 lb. per statute acre.

Red clover should be omitted altogether in districts where it tends to form too large a proportion of the herbage.

ANNOUNCEMENTS AND REMINDERS.

GENERAL.

THE NORTH WEST SCHOOL, STRABANE.—The next session at this school begins on Tuesday, 4th April, and girls who are considering taking advantage of the course of training given there should apply to the Ministry for a copy of the school prospectus, which is free. Scholarships for the North West School are offered by each County Committee of Agriculture. Applications for these Scholarships, for which there is no qualifying examination, but which are awarded in the order in which applications are received, should be forwarded to the Secretary or Agricultural Organiser of the County Committee of Agriculture.

THE ULSTER DAIRY SCHOOL, COOKSTOWN.—The next session at this school begins on Tuesday, 2nd May. Applications are now being received from girls who propose to enter the school on that date. As there are still a few vacancies, girls who propose to take advantage of the full training in poultry-keeping, dairying and rural housewifery given at this school should make immediate application for admission. Copies of the prospectus, which contains an application form, will be supplied, free, on request.

ANNUAL REPORTS OF COUNTY COMMITTEES OF AGRICULTURE.—Up-to-date information on agricultural, horticultural, poultry-keeping and dairying matters, in addition to the detailed results of all the experiments carried out by the Instructors in 1938, are given in the Annual Reports of the County Committees of Agriculture which will be issued shortly. Copies of the reports can be obtained, free, on application to the Secretary or Agricultural Organiser of the County Committee of Agriculture.

LEAFLET REVISION.—Leaflet No. 44, "New Varieties of Farm Crops", has been revised and brought up-to-date. This leaflet contains information regarding some new varieties of oats, wheat, barley and potatoes, and gives the results of tests carried out to compare these new varieties with old varieties. Leaflet No. 7, "Potato Trials", contains detailed descriptions of some of the newer varieties of potatoes and of various trials carried out with them. Leaflet No. 1, "Flax Seed, 1939", contains notes on the characteristics of various varieties of flax and information respecting supplies of seed for the coming sowing season, and with regard to ensuring that the seed is of good quality. Leaflet No. 33, "Spraying Calendar for Apple Orchards", has also been revised and brought up-to-date. This leaflet gives concise information on how and when to spray apple trees in order to obtain a maximum crop of good quality fruit.

A list of all the Leaflets issued by the Ministry is given on the last page of this report. Copies of any of these can be obtained from the Ministry, free, on request.

ACCREDITED POULTRY FARMS.—Hatching eggs and, in some cases, day-old chicks can be obtained from Accredited Poultry Farms. These are produced by hens which have all passed the test for Bacillary White Diarrhoea disease, so that the risk of introducing disease through purchased eggs or chicks will be considerably lessened if purchases are made from such farms. Lists giving the names and addresses of the owners of these farms can be obtained from the Ministry, free, on request.

POULTRY STATIONS.—Lists of these can be obtained, free, from the Secretary or Agricultural Organiser of the County Committee of Agriculture, or from the local Poultry Instructor. The same conditions as regards freedom from disease which govern Accredited Farms are applicable to flocks on poultry stations.

FARM ACCOUNTS.—Farmers are reminded of the Ministry's Scheme for keeping farm accounts. Account books are supplied free to farmers participating in the scheme, and at the end of each year a statement is prepared by the Ministry showing the profit or loss on the year's working. All information received by the Ministry in connection with the accounts is, of course, treated as strictly confidential, and the scheme is free. Full particulars of the scheme will be supplied on request.

OX-WARBLE FLY.—The first dressing of warble-infested cattle must be completed by the 22nd March, and the second dressing should be applied between the 12th and 19th April. Neglect to dress infested cattle is likely to lead to a prosecution. A list of approved washes is given in Circular No. 13, while particulars regarding the preparation and application of washes are given in Leaflet No. 64. Copies of these publications may be had free on request. Every cattle owner is specially asked to co-operate in the extermination of the warble pest by complying faithfully with the terms of the Order, as regards the dressing of his animals at the proper times. The Ministry trusts that there will be a whole-hearted effort this season to comply with the Order, and that the necessity to bring prosecutions against defaulters will not arise.

CARE OF BULLS.—Many farmers will have purchased new bulls at recent sales, and will be concerned with keeping their animals in good breeding condition. Useful hints on the care and management of bulls are given in Leaflet No. 61.

POULTRY CLASS.—A class in Poultry-keeping, arranged by the County Armagh Committee of Agriculture, commenced on Monday, 6th March. The class meets in Mullabawn Technical School on Monday, Tuesday, Thursday and Friday of each week, from 7 p.m. to 9 p.m., and will be held for a period of three weeks.

BROADCASTING.—The following arrangements for the broadcasting of talks and discussions of an agricultural nature from the Northern Ireland station of the British Broadcasting Corporation have been made :—

Day & Date	Time	Subject.	Speaker.
Monday, 27th March	7-30 to 7-50 p.m.	Plants poisonous to live stock.	Mr. P. A. Linehan, M.Agr., Queen's University, Belfast.
Wednesday, 12th April	7-30 to 7-50 p.m.	Orchard management	Mr. H. Suffern, Ballyclare, Crumlin.
Tuesday, 25th April	9-45 to 10-0 p.m.	How to get top price for eggs.	Mr. R. F. Thompson, Ministry of Agriculture.
8th May	7-30 to 7-50 p.m.	Seasonal diseases of farm stock.	Mr. W. R. Kerr, M.R.C.V.S., D.V.S.M., Ministry of Agriculture.

SCHOLARSHIPS IN CREAMERY MANAGEMENT.

The Ministry of Agriculture offers this year for competition two scholarships which will enable the holders to pursue a course of technical training at the University College, Cork, with a view to qualifying for the post of Creamery Manager. The Course is of two years' duration, and candidates who are successful at the Competitive Examination will be enabled to pursue the course leading to the College Diploma in Dairy Science. In view of the provision in the Marketing of Dairy Produce Act (Northern Ireland) that Managers of Central and Auxiliary Creameries shall hold qualifications of a standard prescribed by the Ministry, this opportunity of obtaining the requisite training is of special importance, as the Diploma referred to above is one of the highest qualifications which a Creamery Manager can possess. The Course will consist of two terms of technical training at University College, Cork, during the winters of 1939-40 and 1940-41, with an intervening period of practical training of 20 weeks' duration at the College Experimental Creamery, and at an approved Creamery in Northern Ireland in the summer of 1940.

Applicants for these Scholarships must be between 18 and 30 years of age on the 1st October, 1939, and must be resident or the sons of residents in Northern Ireland for the 12 months ended 31st December, 1938. Previous knowledge of creamery work is not essential, but a good standard of general education will be required.

Application forms and full particulars regarding the Scholarships may be obtained from the Secretary, Ministry of Agriculture, Stormont. It should be noted that the prescribed form of application, duly completed, must be lodged with the Ministry not later than the 15th April, 1939.

CHEAP FACILITIES FOR THE PURCHASE OF SPRAYING MATERIALS AND SPRAYING MACHINES.

To assist apple-growers in the control of those orchard pests which so seriously reduce the market value of their produce, the Ministry is prepared to grant the following facilities :—

(1) LOANS FOR THE PURCHASE OF SPRAYING MATERIALS.

Loans of £10 and upwards will be given for this purpose. The rate of interest chargeable will be $3\frac{1}{2}$ per cent. If the loan is granted on or before the 30th June in any year, it will be repayable by two equal instalments of principal together with interest on the outstanding balance on the 31st December in that year and the 31st December of the year following, and if granted on or after 1st July in any year, will be repayable in full on 31st December of the following year.

Forms of application for these loans may be obtained from the Secretary, Ministry of Agriculture, Stormont, Belfast, or from Milk Recording Associations, Creameries, County Committees of Agriculture, Ulster Farmers' Union Branches, Young Farmers' Clubs, or any police barracks in the fruit-growing areas.

(2) LOANS FOR THE PURCHASE OF SPRAYING MACHINES.

Any grower contemplating the purchase of a spraying machine may receive a loan for the purpose. Interest will be at the rate of $3\frac{1}{2}$ per cent. and the loan will be repayable in three years by equal annual instalments of principal together with interest on the balance of the loan outstanding at each payment day.

Forms of application for these loans will be supplied by the Ministry of Agriculture on request.

For both classes of loan referred to above the security will be a Promissory Note to be signed by the borrower and two sureties who must be approved by the Ministry.

APPLE ORCHARD SPRAYING PROGRAMME.

Time-Table and Cost of Materials.

Time of Application	Material to use.	Strength of Spray Fluid.	Approximate cost per 40 gals. of Spray Fluid.	Pest or Disease Controlled.
January & February (Dormant Period)	Tar-oil wash	2 gals. (as bought) 38 gals. water (5%)	3/9	Apple Aphides and Apple Sucker
Late March & Early April (Bud Burst Stage)	Petroleum wash	2 gals. (as bought) 38 gals. water (5%)	4/1½	Capsid Bug
Late April (Green Bud Stage)	Bordeaux Mixture	1 lb. Bluestone, 4½ lb. Hydrated Lime, 40 gals. water	4½d.	Apple Scab
Mid May (Pink Bud Stage)	Bordeaux Mixture	1 lb. Bluestone, 4½ lb. Hydrated Lime, 40 gals. water	4½d.	Apple Scab
Late May (Petal-fall Stage)	Bordeaux Mixture	1 lb. Bluestone, 4½ lb. Hydrated Lime, 40 gals. water	4½d.	Apple Scab
Late June (Post Petal-fall Stage)	Bordeaux Mixture	1 lb. Bluestone, 4½ lb. Hydrated Lime, 40 gals. water	4½d.	Apple Scab
Late July	Bordeaux Mixture	1 lb. Bluestone, 4½ lb. Hydrated Lime, 40 gals. water	4½d.	Apple Scab

Note—When a tar-petroleum wash is applied in February thus eliminating an application of a petroleum wash in late March—early April, the cost per 40 gals. of spray is about 8/3.

SEVENTEENTH

EGG LAYING TEST AT STORMONT.

The fifth period of four weeks ended on the 17th February, 1939. There was a further increase in egg production. The total number of eggs laid by the competing birds was 12,226, which on the basis of the original flock of 756 birds, gives an average of 16.17 eggs per bird, as compared with 14.41 for the previous period and 14.4 for the fifth period of the previous test. Of the 12,226 eggs laid, 11,092 (90.72 per cent.) were scoring eggs, i.e., 2 ozs. or over in weight.

The highest sectional average egg production during the fifth period is to the credit of the Rhode Island Reds in Section 6, viz., 19.1 eggs per bird, the White Wyandottes in Section 2 being next with an average of 17.9 eggs per bird.

The average production during the 20 weeks the test has been in progress, based on the flock of 756 birds, was 65.93 eggs per bird as compared with 63.90 for the corresponding 20 weeks of the previous test. The average production of the 725 birds alive at the end of the fifth period was 68.19 eggs per bird.

MORTALITY.—Thirty-one of the 756 birds accepted for the test have died. This represents a rate of 4.10 per cent., which is slightly lower than the rate at the corresponding stage of the previous test. Eighteen pens have each lost one bird, five pens have each lost two birds, and one pen has lost three birds.

The number of deaths and the percentage mortality in the different sections are as follows:—

Section and Breed.					No. of Deaths.	Percentage Death rate.
Section						
1	White Wyandottes (Open)	...	...	...	2	1.66
2	" " (Stationholders)	...	...	...	3	5.00
3	White Leghorns (Open)	...	...	...	4	6.66
4	" " (Stationholders)	...	...	...	7	10.60
5	Rhode Island Reds (Open)	...	...	...	5	2.87
6	" " " (Stationholders)	...	...	...	2	3.03
7	Any other breed	...	...	...	6	4.00
8	Clubs (any breed)	...	...	...	2	3.33

The mortality amongst the different breeds is as follows:—

Breed	No. of Birds.	No. of Deaths.	Percentage Death rate.
Rhode Island Red	282	9	3.2
White Wyandotte	198	5	2.5
White Leghorn	126	11	8.7
Brown Leghorn	12	1	8.3
Black Leghorn	6	—	—
Light Sussex	66	—	—
Buff Rock	42	3	7.1
Maran	6	2	33.3
Silver Grey Dorking	6	—	—
Welsummer	6	—	—
Ancona	6	—	—

The encouraging features about this analysis are the absence of deaths amongst the Light Sussex and the low death rate amongst the White Wyandottes. The three Buff Rock casualties are all from the same pen. The numbers of Brown Leghorns and Marans are too small to justify comment.

The following are particulars of the leading pens in each Section at the end of the fifth period.

SECTION 1. WHITE WYANDOTTES (Open). 20 pens.

Position	No. of Pen	Name and address of Owner.	Number of eggs laid.				Test Score
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	1	Mrs. K. Bamforth, Melmount Road, Strabane, Co. Tyrone.	350	155	12	—	505
2	12	Mr. J. Lenaghan, Tyconnett, Ballynahinch, Co. Down.	216	288	22	—	504
3	11	Mr. J. Lenaghan, Tyconnett, Ballynahinch, Co. Down.	242	242	35	—	484
4	8	Mrs. D. C. Gamble, The Retreat, Coalisland, Co. Tyrone.	211	253	43	—	464
5	19	Dr. J. Stuart, Killyflue, Ballymena, Co. Antrim.	97	363	123	1	460

SECTION 2. WHITE WYANDOTTES (Stationholders). 10 pens.

Position	No. of Pen	Name and address of Owner.	Number of eggs laid.				Test Score
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	25	Miss A. Brown, Ballyhill, Crumlin, Co. Antrim.	147	367	47	—	514
2	30	Mrs. M. J. Veitch, Knockninny, Thompson's Bridge, Enniskillen, Co. Fermanagh	297	184	20	—	481
3	23	Mrs. J. Armstrong, Keeranbeg House, Donagh, Lisnaskea, Co. Fermanagh	205	224	39	3	429

SECTION 3. WHITE LEGHORNS (Open). 10 pens.

1	39	Mr. J. Telford, Drumarkin, Rathfriland, Co. Down.	239	223	43	1	462
2	41	Mr. J. Waugh, Aldfreck, Ballycarry, Belfast	170	292	60	—	462
3	34	Mrs. H. M. Fletcher, Ashgrove, Lisadian, Hillsborough, Co. Down.	104	208	50	—	312

SECTION 4. WHITE LEGHORNS (Stationholders). 11 pens.

1	52	Mrs. J. Short, Tullyvalley, Seskinore, Omagh.	182	226	119	1	408
2	50	Miss I. J. Magill, Mulloughdrin, Dromore, Co. Down	126	269	88	5	395
3	47	Miss I. Gilmer, Rashee, Ballyclare, Co. Antrim.	62	301	72	1	363

SECTION 5. RHODE ISLAND REDS (Open). 29 pens.

1	66	The Marquis of Hamilton, Baronscourt, Omagh, Co. Tyrone.	254	313	31	—	567
2	67	Miss J. A. Irwin, Mount Irwin, Tynan, Co. Armagh	116	354	38	1	470
3	73	Mrs. J. McNeill, Drain's Bay, Larne, Co. Antrim	277	164	12	—	441
4	74	Mr. R. J. O'Hanlon, Mullahead, Tanderagee, Co. Armagh	232	200	152	1	432
5	61	Mrs. E. R. Dunwoody, Benmore, Islandmagee, Co. Antrim	85	328	72	2	413

SECTION 6. RHODE ISLAND REDS (Stationholders). 11 pens.

Position	No. of Pen	Name and Address of Owner.	Number of eggs laid				Test Score
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	89	Miss M'Kee, Ardmillan House, Killinchy, Co. Down.	193	332	61	—	525
2	83	Mrs. H. H. Dickson, Lower Coagh, Co. Tyrone	199	321	63	—	520
3	82	Mrs. H. Rea, Lisowen, Listooder, Crossgar, Co. Down	258	250	24	—	508

SECTION 7. ANY OTHER PURE BREED. 25 pens.

1	107	Mr. R. Holmes, Killykergan, Coleraine, Co. Derry (Buff Rock)	129	328	135	1	457
2	108	Mr. R. Holmes, Killykergan, Coleraine, Co. Derry (Buff Rock)	246	118	24	—	364
3	97	Miss M. A. Lawson, Roundhill House, Strabane, Co. Tyrone (Light Sussex)	198	160	44	3	358
4	106	Mr. R. Holmes, Killykergan, Coleraine, Co. Derry (Buff Rock)	74	283	192	4	357
5	114	Mr. John E. N. Barnhill, Brickfield, Strabane, Co. Tyrone (Silver-Grey Dorking)	33	313	126	4	346

SECTION 8. CLUB ENTRIES. 10 pens.

1	126	Portadown Poultry Club, Co. Armagh (Rhode Island Red)	58	384	111	1	442
2	120	Ballywalter Young Farmers' Club, Co. Down (Rhode Island Red)	175	265	25	—	440
3	124	Dungannon Poultry Club, Co. Tyrone (White Wyandotte)	176	263	75	—	439

"Test Score" means the total of the super-grade and first-grade eggs.

Pen No. 66 of Rhode Island Reds in Section 5, entered by the Marquis of Hamilton, retains the leading position in the entire test. Second place is now occupied by Miss S. McKee's Pen No. 89 of Rhode Island Reds in the Stationholders' Section for that breed, while Pen No. 25 in the same section, entered by Mrs. H. H. Dickson, is third.

PRICES OF FEEDING STUFFS AT SPECIFIED CENTRES.

The following table shows the retail cash prices per cwt. of Feeding Stuffs at 1st March, 1939, in ten representative centres in Northern Ireland.

	Antrim	Armagh	Ballymena	Belfast	Castlewellsan	Coleraine	Dungannon	Enniskillen	Omagh	Strabane
Protein Foods :										
Linseed (whole) ...	s. d. 13 0	s. d. 15 0	s. d. 16 0	s. d. 16 0	s. d. —	s. d. 19 0	s. d. —	s. d. 16 6	s. d. 16 9	s. d. —
Linseed Cake, home-made ...	11 6	13 0	11 9	11 6	—	12 6	—	12 0	12 0	—
Linseed Cake, foreign ...	—	12 0	11 3	11 0	11 9	12 0	11 6	11 0	11 0	9
Linseed Cake Meal ...	11 6	13 0	11 9	11 0	11 9	12 0	12 6	12 6	11 6	11 0
Cotton Cake, decorticated ...	9 6	—	9 3	10 6	10 0	9 6	10 0	10 6	9 6	10 0
Earthnut Cake, decorticated ...	9 6	—	9 0	9 0	—	9 0	9 3	—	9 0	8 6
Soya Bean Meal (extracted) ...	10 3	10 0	10 6	10 0	—	11 6	10 6	10 9	11 6	11 0
Fish Meal (60% protein) ...	17 0	17 0	16 6	16 6	—	17 0	17 0	17 6	16 6	16 6
Meat Meal (60% protein) ...	16 6	15 0	14 3	13 6	14 0	—	14 9	—	15 6	16 3
Meat and Bone Meal (40% protein) ...	—	10 0	9 3	9 6	—	10 6	9 6	—	—	10 6
Medium Protein Foods :										
Palm Kernel Cake ...	9 0	—	8 6	7 6	—	9 0	—	—	10 0	—
Palm Kernel Meal ...	9 0	9 6	—	7 6	—	9 0	—	—	10 0	—
Starchy Foods :										
Maize (whole) ...	6 9	6 10½	7 0	6 6	—	7 6	7 0	7 6	—	—
Maize Meal ...	7 3	7 3	7 0	7 0	7 6	7 6	7 1½	7 6	7 3	7 6
Maize Flaked ...	7 9	7 9	7 6	7 6	7 9	8 0	8 0	—	8 0	8 6
Wheat (whole) ...	6 6	6 6	6 0	6 6	6 6	6 6	6 9	8 0	7 0	6 6
Bran, Red ...	7 6	7 3	7 4½	7 6	—	7 9	7 6	8 6	8 0	7 9
Bran, White ...	8 9	8 6	8 4½	9 0	8 9	9 0	8 9	9 0	10 3	9 6
Pollard, Brown ...	8 3	7 6	7 9	7 6	—	7 6	7 6	8 0	8 3	7 0
Pollard, White ...	—	8 6	8 0	9 0	8 9	8 0	8 6	9 0	9 6	8 9
Barley Meal ...	7 3	8 0	7 6	7 3	7 3	8 0	7 9	8 0	8 6	8 0
Tapioca Root Flour ...	—	—	7 0	7 3	5 6	—	—	8 0	—	—
Oats (whole) ...	7 0	7 0	6 0	7 0	6 0	6 3	8 0	7 6	6 0	6 0
Crushed Oats ...	7 6	7 6	6 6	7 9	—	6 9	8 6	8 6	7 0	7 0

Non-Concentrates :—The average prices at representative markets at the beginning of March, 1939, were as follows :—Potatoes (Main Crop), 2/10½ per cwt.; Upland Hay, 61/2 per ton; Meadow Hay, 46/3 per ton; Oat Straw, 41/2 per ton; Turnips (Swede), 17/6 per ton.

AVERAGE PRICES OF FEEDING STUFFS.

The following table shows the average retail cash prices per cwt. of feeding stuffs at 1st March, 1939, with comparative prices as at the first of the previous month; the costs per unit of protein equivalent and of starch equivalent are also given in respect of each month.

	Protein Equiv- alent	Starch Equiv- alent	Average price per cwt. at		Cost per unit of protein equivalent		Cost per unit of starch equivalent	
			1st March, 1939	1st Feby., 1939	March	Feby.	March	Feby.
Protein Foods			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Linseed	18.75	119.2	16 1	16 1	17 2	17 2	2 8	2 8
Crushed linseed	18.75	119.2	17 4	17 2	18 6	18 4	2 11	2 10
Linseed cake (home made)	24.6	74.0	12 3	12 5	10 0	10 1	3 4	3 4
Linseed cake (foreign)	27.05	74.5	11 4	11 7	8 5	8 7	3 0	3 1
Linseed cake meal	24.6	74.0	11 10	12 0	9 7	9 9	3 2	3 3
Decorticated Cotton cake	34.65	68.4	9 10	9 10	5 8	5 8	2 11	2 11
Decorticated Earthnut cake	41.3	73.0	9 0	8 11	4 4	4 4	2 6	2 5
Extracted Soya Bean meal	38.3	64.0	10 8	10 7	5 7	5 6	3 4	3 3
Fish meal (60% protein)	53.0	58.9	16 6	16 8	6 3	6 3	5 7	5 8
Meat meal (60% protein)	55.0	61.0	15 0	15 3	5 5	5 6	4 11	5 0
Meat & Bone meal (40% protein)	36.0	44.0	9 11	9 11	5 6	5 6	4 6	4 6
Medium Protein Foods								
Palm kernel cake	16.95	73.2	8 6	8 7	10 0	10 2	2 4	2 4
Palm kernel meal	16.55	71.3	8 6	8 10	10 3	10 8	2 5	2 6
Starchy Foods								
Maize	7.65	77.6	7 0	7 7	18 4	19 9	1 10	1 11
Maize meal	7.65	77.6	7 3	7 8	18 11	20 0	1 11	2 0
Flaked maize	9.2	84.0	7 10	8 4	17 0	18 1	1 10	2 0
Wheat	9.6	71.6	6 8	6 10	13 11	14 3	1 10	1 11
Red bran	10.0	42.6	7 8	7 9	15 4	15 6	3 7	3 8
White bran	10.0	42.6	9 0	9 1	18 0	18 2	4 3	4 3
Brown pollard	10.85	56.5	7 8	7 9	14 2	14 3	2 9	2 9
White pollard	10.85	56.5	8 8	8 9	16 0	16 2	3 1	3 1
Barley meal	7.3	71.4	7 9	7 11	21 3	21 8	2 2	2 3
Oats	7.6	59.5	6 8	6 8	17 7	17 7	2 3	2 3
Crushed oats	7.6	59.5	7 4	7 4	19 4	19 4	2 6	2 6
Tapioca root flour	1.2	83.5	7 5	7 1	123 7	118 1	1 9	1 8
Non-Concentrates								
Potatoes	0.85	18.5	2 10 $\frac{3}{4}$	3 1 $\frac{1}{2}$	68 2	73 6	3 1 $\frac{1}{2}$	3 4 $\frac{1}{2}$
Turnips (Swede)	0.7	7.3	0 10 $\frac{1}{2}$	0 10 $\frac{1}{2}$	25 0	25 0	2 4 $\frac{1}{2}$	2 4 $\frac{1}{2}$
Upland hay	4.9	29.0	3 0 $\frac{1}{2}$	3 1	12 6	12 7	2 1 $\frac{1}{2}$	2 1 $\frac{1}{2}$
Meadow hay	4.7	37.0	2 3 $\frac{1}{2}$	2 3 $\frac{1}{2}$	9 10	9 8	1 3	1 2 $\frac{3}{4}$
Oat Straw	0.5	21.0	2 0 $\frac{1}{2}$	2 1 $\frac{1}{2}$	82 6	85 0	1 11 $\frac{1}{2}$	2 0 $\frac{1}{2}$

The object of the foregoing tables, besides providing information regarding the prices of feeding stuffs and the trend of prices, is to give purchasers a

guide as to the economic purchase of supplies. It should be understood that the price per ton is not a sound basis on which to judge whether or not a particular food or grade of a particular food is good value for money. The composition of the foods is the only basis on which different grades can be compared. The value of foods of different kinds, but of the same nature in reference to market prices, can also be compared on this basis.

In the case of an artificial manure which supplies only one fertilising ingredient as, for example, sulphate of ammonia, which supplies nitrogen, the cost of the unit of nitrogen at the price charged can be determined quite readily by dividing the price per ton by the percentage of nitrogen in the sample, and the figure thus obtained is the cost of a unit of nitrogen. By this method the most economical source of nitrogen can be ascertained. Similarly, in the cases of phosphatic and potassic manures.

With feeding stuffs, however, the same method cannot be applied to determine comparative values. This is because every feeding stuff contains three important food constituents in varying proportions. These are (1) carbohydrates, (2) oils or fats, and (3) proteins or albuminoids. The carbohydrates comprise a group of substances such as starch, sugar and cellulose. These substances supply heat or energy to the animal, and the surplus goes to form fat. They are the fuel which the animal requires to keep the body "fires" burning. The oils of a feeding stuff are also heat and energy suppliers, and the surplus is stored as fat. The oils are approximately $2\frac{1}{2}$ times more valuable than the carbohydrates as heat and energy producers, but excess in a ration may lower its digestibility and cause digestive troubles. The proteins are the most valuable and most expensive food constituent. They contain nitrogen and are the part of the food from which products which contain protein are chiefly made. Thus the protein products, such as lean meat, milk and eggs, are formed principally from protein, and young, growing animals, dairy cows and laying hens must have an adequate quantity of protein for full growth, development and production.

While all animals require a certain amount of carbohydrates, oils and proteins, the relative amounts depend on the class of stock. For example, a two-year-old fattening bullock requires much less protein than a dairy cow in milk and a fattening chicken less than a laying pullet.

There are wide differences in the composition of the different kinds of feeding stuffs. Some are rich in carbohydrates and, therefore, particularly valuable for fattening purposes. These include oats, maize, barley and wheat, and their products. Others are rich in protein and are valuable for producing flesh, milk and eggs. These include decorticated cotton cake, decorticated earthnut cake, meat meal and soya bean meal.

In the following table the composition of some of the commonly used feeding stuffs is shown—

	Water.	Protein.	Oil.	Carbohydrates.
Non concentrates				
Swede turnips ...	88	1	0.2	9
Potatoes ...	75	2	0.1	21
Cabbage ...	89	1.5	0.5	8
Oat Straw ...	14	4	2	37
Meadow hay ...	10	10	3	45
Pasture grass ...	80	3.5	0.8	10
Fattening Foods				
Crushed oats ...	13	9	6	60
Maize meal ...	12	10	4	70
Barley meal ...	13	12	2	66
Pollard ...	13	15	5	57
Flesh forming foods				
Decorticated Cotton cake ...	9	40	9	26
Decorticated Earthnut cake ...	10	46	7	23
Meat meal ...	11	60	6	—
Soya bean meal ..	11	44	1.5	32

The problem confronting the purchaser of feeding stuffs, who is concerned with the business of getting best value for money, is one which is much more difficult to solve than is the case with artificial fertilisers. There are at least four aspects of the problem to be considered :

- (1) The quality of the different foods offered for sale. This can be determined by reference to the particulars of composition which a seller must give a purchaser in accordance with the Fertilisers and Feeding Stuffs Act.
- (2) The physical condition of the foods, and if fresh or stale.
- (3) The suitability of the foods for the purpose in view.
- (4) The comparative values of the foods at the prices quoted.

The chief concern of this section of the Report is comparative values and, therefore, that aspect of the problem will be considered specifically.

The proteins play a part in the nutrition of the animal which cannot be taken by either carbohydrates or oils. In addition to this, the proteins, carbohydrates and oils have very different values for the production of energy or fat. It therefore follows that the simple procedure of totalling the percentages of these three ingredients and dividing this total into the price per ton in order to obtain a value for a unit of the food-stuff is quite unsound. Various methods have been used to compare the values of different feeding stuffs, but none is completely satisfactory. For practical purposes the least cumbersome is the

method whereby the food-stuffs are placed in groups of similar composition, and the values of the members of each group are then compared by consideration of (a) their protein equivalents, and (b) their starch equivalents. The starch equivalent is the number of pounds of starch which would be required to produce the same amount of "fat" in an animal as 100 pounds of the food-stuff in question. It is essentially a measure of the fat-producing value of the food-stuff. The protein equivalent is the number of pounds of digestible true protein, plus half the number of pounds of non-protein nitrogenous substances such as amides, present in 100 pounds of the foodstuff. It is a measure of the value of the food-stuff to the animal as a source of protein.

By this method all foods can be reduced to comparable standards based on (1) the protein equivalent, and (2) the starch equivalent.

The next stage in comparing values is to determine the cost of a unit of protein equivalent and of starch equivalent in the different foods which are being compared, and to enable the reader to do this the protein and starch equivalent figures for the different foods are given in the table on page 710, and also the cost per unit of protein equivalent and of starch equivalent in each case. These costs have been determined by dividing the protein equivalent figure and the starch equivalent figure, respectively, into the current price per ton, and the lower the quotient figures thus obtained the cheaper is the particular food as a source of protein or of starch equivalent as the case may be.

However, it would be quite misleading to compare the cost of a unit of protein equivalent in a protein food (which is purchased principally for its protein) with the cost of a similar unit in a starchy food. In other words, foods such as maize meal and pollard cannot be compared on the basis of cost of protein equivalent with foods such as decorticated cotton cake and meat meal.

The best course to adopt is to consider for what purpose the particular food is required, decide what foods are suitable for that purpose, examine the samples of these different foods which are offered and, if all appear to be satisfactory, apply the unit value system of determining which one provides protein equivalent or starch equivalent at the cheapest rate. A few examples may be helpful in explaining the procedure.

- (1) Suppose it is intended to purchase a protein food for the purpose of balancing a ration for dairy cows. The protein foods suitable for dairy cows are decorticated cotton cake, decorticated earthnut cake and soya bean meal. From the table on page 710 it is seen that at the current average prices of these foods the cost of the unit of protein equivalent in each is as follows:—

Decorticated cotton cake	...	...	5/8d.
Decorticated earthnut cake	...	...	4/4d.
Soya bean meal	...	...	5/7d.

Accordingly decorticated earthnut cake is the cheapest source of protein.

- (2) A protein food is required as a milk substitute to balance the ration for fattening pigs. The foods suitable for this purpose are soya bean meal, meat meal and meat and bone meal. Referring again to the table, it is seen that at the current average prices of these foods the cost of the unit of protein equivalent in each is as follows:—

Soya bean meal	...	...	5/7d.
Meat meal (60% protein)	...	...	5/5d.
Meat and bone meal (40% protein)	...	...	5/6d.

Therefore meat meal (60% protein) is the cheapest source of protein amongst the purchased foods suitable for pigs. This example shows also how the price per ton may mislead a purchaser into thinking he is being economical when he buys at the cheapest price. The 60% meat meal costs 5/1d. per cwt. more than the 40% meat and bone meal, and yet it is a cheaper source of protein than the latter. Besides, a lesser proportion in the meal mixture will suffice, and having usually a lower content of oil than the 40% grade, it is likely to prove more satisfactory than that grade, both from the thriving point of view and its effect on the quality of the bacon.

- (3) Whether is it more economical to feed white pollard than brown pollard or white bran than red bran, even though the prices per ton of the white grades are higher than those of the brown or red grades? The figures in the table show that the cost of both the unit of protein equivalent and of starch equivalent is less for the brown pollard than the white, and less for the red than the white bran. It follows, therefore, that at current prices the coloured grades of pollard and bran are cheaper than the white grades. It should be remembered in this connection, however, that the comparison of costs in these cases has been made on the assumption that the composition of the coloured grades is the same as that of the white grades. A pollard containing say, 8 per cent. fibre, even if of a white colour, would have a far lower feeding value than one containing only 4 per cent. of fibre. Colour is not a guide as to the feeding value of pollard or bran.

PRICES OF FERTILISERS AT SPECIFIED CENTRES.

The following table shows the retail cash prices per ton of fertilisers at 1st March, 1939, at representative centres in Northern Ireland.

	Antrim	Armagh	Ballymena	Belfast	Castellwellan	Coleraine	Dunannon	Enniskillen	Omagh	Strabane
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Nitrogenous Manures :										
Nitrate of Soda (15.5% N.)	8 10 0	9 0 0	—	8 0 0	8 10 0	9 0 0	8 15 0	9 0 0	8 10 0	8 10 0
Sulphate of Ammonia (20.6% N.)	8 0 0	8 0 0	—	7 12 6	8 0 0	8 0 0	8 0 0	8 0 0	8 2 6	8 10 0
Nitro Chalk (15.5% N.)	8 5 0	—	—	7 10 6	8 5 0	8 10 0	8 15 0	8 10 0	8 0 0	8 12 6
Phosphatic Manures :										
Superphosphate (16% S.P.A.)	3 17 6	3 15 0	3 11 6	3 13 9	3 15 0	3 12 6	4 0 0	4 0 0	4 1 3	4 0 0
Sensol (5% S.P.A., 15% P.A.)	3 10 0	3 7 6	3 7 6	2 17 6	—	3 7 6	3 10 0	3 12 6	3 11 3	3 10 0
*Basic Slag (16% to 17% P.A.)	—	—	—	2 18 0	—	—	—	—	—	—
*Basic Slag (18% to 20% P.A.)	—	—	—	3 6 0	—	—	—	—	—	—
Gafsa Rock Phosphate (26% P.A.)	3 5 0	3 0 0	3 2 6	2 10 0	2 17 6	3 5 0	3 5 0	3 5 0	3 5 0	3 5 0
Potash Manures :										
Kainit (14% P.)	3 10 0	—	3 10 0	3 0 0	—	3 10 0	3 15 0	3 15 0	3 7 6	3 10 0
Potash Salts (20% P.)	4 7 6	4 10 0	4 5 0	4 0 0	—	4 7 6	4 10 0	4 15 0	4 10 0	4 10 0
Potash Salts (30% P.)	5 15 0	5 15 0	5 10 0	5 5 0	—	5 15 0	6 0 0	6 0 0	5 15 0	5 17 6
Muriate of Potash (50% P.)	8 15 0	9 0 0	8 17 6	8 10 0	9 0 0	8 10 0	9 0 0	9 10 0	9 0 0	9 5 0
Agricultural Salt	—	2 0 0	2 10 0	3 10 0	—	—	3 0 0	2 0 0	—	3 0 0

Abbreviations : N.—Nitrogen.

S.P.A.—Soluble Phosphoric Acid.

P.A.—Phosphoric Acid.

P.—Potash.

*If obtained under the Land Fertility Scheme, the price of British made basic slag will be 25 per cent. less than the figures quoted, since a subsidy equivalent to one-quarter is payable. The price for British basic slag, c.i.f. Belfast and Londonderry, is fixed by the Land Fertility Committee and is the same at both these ports. The retail prices at Belfast given above are based on these c.i.f. prices plus the charges approved by the Committee for unloading and distribution. The price at other centres will be the price at Belfast or Londonderry plus the carriage from the port to the particular centre.

The cost of the unit of fertilising ingredient is determined by dividing the price per ton by the percentage of the ingredient contained in the manure, and this method of determining values is the only sound basis on which two different manures or two grades of the same manure, supplying the same fertilising ingredient, can be compared. The price per ton is not a reliable guide as to which is the better value for money. For example, at the prices ruling at Belfast for the various manures, as shown on the table on page 715 the costs of the units of the fertilising ingredients are as follow :—

Nitrate of Soda (15.5% N.)	...	...	10/3½	(Nitrogen)
Sulphate of Ammonia (20.6% N.)	...	...	7/4	"
Nitro Chalk (15.5% N.)	...	...	9/8½	"
Superphosphate (16% S.P.A.)	...	...	4/7½	(Phosphoric Acid)
Semsol (5% S.P.A., 15½% P.A.)	...	...	2/9½	"
Basic Slag (16% P.A.)	...	...	3/7½	"
Basic Slag (19% P.A.)	...	...	3/5½	"
Gafsa Rock Phosphate (26% P.A.)	...	...	1/11	"
Kainit (14% P.)	...	...	4/3½	(Potash)
Potash Salts (20% P.)	...	...	4/-	"
Potash Salts (30% P.)	...	...	3/6	"
Muriate of Potash (50% P.)	...	...	3/4½	"

It is seen that the price of 14% Kainit is £3 0s. 0d. per ton, and of 30% Potash Salts is £5 5s. 0d. per ton, and it might be concluded that the Kainit was the better value for money. This is not so. The 30% Potash Salts contains more than twice as much Potash as the Kainit, and is, therefore, a cheaper source of potash when the price is even double that at which Kainit is offered. The cost of a unit of potash in the 30% Potash Salts is seen to be only 3/6d., whereas the cost of a unit of potash in Kainit is 4/3½d. At the prices ruling for these manures, 30% Potash Salts is, therefore, better value for money than Kainit. Similarly, it is seen that at the prices prevailing at Belfast, Gafsa Rock Phosphate is the cheapest source of phosphoric acid and Sulphate of Ammonia is the cheapest source of Nitrogen.

In connection with the costs of the units of phosphoric acid, as shown in the above table, it should be noted that in the case of Superphosphate, the cost is that of a unit of soluble phosphoric acid: whereas in the cases of Basic Slag, Semsol, and Gafsa Rock Phosphate, the figures represent the cost of a unit of insoluble phosphoric acid. It would not, therefore, be correct to compare the unit price of the phosphoric acid in Superphosphate with those of the phosphoric acid in the other three. It should also be noted that the costs of the units of phosphoric acid in basic slag will be less than the figures shown above, if that manure is purchased under the terms of the Land Fertility Scheme.

TRADE AND PRICES OF LIVE STOCK AT BELFAST AUCTION MARTS.

Supplies of fat cattle at the Belfast Auction Marts last month were considerably smaller than in January. Demand continued good all month, and a firmer price tendency was noticeable. At times good quality cattle fetched from 1/- to 1/6d. per cwt. more than in January. The average quotation for the month was 9d. firmer at 36/11d. per live cwt. Top quality cattle generally ranged in price from 37/- to 41/-, and occasionally 42/- per live cwt. Good commercial stock fetched from 35/- to 38/6d. per live cwt., and rougher cattle from 33/- upwards. The following table shows the average prices of fat cattle during the past five weeks, compared with the corresponding dates a year ago:—

<i>Week ended</i>	<i>per cwt.</i>	<i>Week ended</i>	<i>per cwt.</i>
11th February, 1939	36/6	12th February, 1938	40/10
18th " "	36/9	19th " "	40/2
25th " "	37/8	26th " "	40/8
4th March, 1939	37/-	5th March, 1938	41/2
Average for the month	36/11	Average for the month	40/6
11th March, 1939	36/7	12th March, 1938	40/6

Store cattle were also in smaller supply last month. Demand was rather quieter than in January. Quality was of a fairly good standard all month, and the decrease in prices was only slight. Large forward animals were again in best demand for shipment, and young sorts also met a ready clearance. Prices for best quality were maintained, but secondary sorts cheapened.

Dairy cattle were forward in smaller number, and trade was much the same as in January. The best found a ready market at late rates, but inferior sorts were almost unsaleable. Prices on average were about 10/- per head lower than in January.

Smaller supplies were evident last month in the fat sheep and lamb sales also, but a brisk trade ruled all month and prices advanced, especially for the better qualities of fat lambs. The first of the new season's crop of lambs came on the market in the last week of the month and fetched around 60/- each.

Prices per head for stores, dairy cattle, and sheep and lambs during each week of the month are shown on the next page.

PRICES OF OTHER STOCK AT THE BELFAST AUCTION MARTS.

Description.		Week ended 11-2-39	Week ended 18-2-39	Week ended 25-2-39	Week ended 4-3-39
Fat Cows	...	...	...	...	...
Store Cattle :					
Large Forward Stores	...	...	...	...	...
Younger Stores	...	...	...	...	...
Dairy Cattle :					
Milch Cows	...	...	...	...	...
Springers	...	...	...	...	...
Sheep and Lambs :					
Crossbred and White Ewes	...	...	...	...	...
Blackface Ewes	...	...	...	...	...
Crossbred and White Lambs	...	...	...	...	...
Crossbred and White Hoggets	...	...	...	...	...
Blackface Lambs	...	...	...	...	...
Rams	...	...	...	...	...

PRICES OF LIVE STOCK.

Average prices of Live Stock at Fairs during the month of February, 1939.

Date	Fair	Calves (under 9 months)	Store Cattle	Fat Cattle (18 months and over)	Springers		Milch Cows	Fat Lambs (under 12 months)	Young Pigs
					Cows	Heifers			
		Per head £ s.	Per cwt. Live weight	Per cwt. Live weight	Per head £ s.	Per head £ s.	Per head £ s.	Per head £ s.	Per head £ s.
1	Londonderry	—	33/- to 39/-	33/-	17 10	16 5	17 10	—	6
1	Rathfriland	6 11/3	33/6 to 39/-	36/-	19 5	17 15	—	—	11/3
1	Strabane	6 0	35/- to 37/-	34/-	15 10	—	13 0	†1 2/6	—
2	Ballymoney	7 10	35/3 to 39/-	—	23 0	21 0	15 10	—	1 10
3	Moy	—	34/- to 42/-	35/6	15 12/6	15 5	14 11/3	—	—
7	Omagh	7 10	37/- to 40/-	35/-	17 10	14 10	15 10	†1 17/6	—
8	Crossgar	—	38/- to 40/-	—	19 5	—	—	—	—
8	Irvinestown	6 16/9	35/6 to 38/-	33/-	14 10	15 0	—	—	1 16
8	Kilrea	6 11/9	34/- to 40/-	35/-	18 10	16 0	—	—	1 6
10	Ballygawley	—	27/6 to 38/6	35/-	15 15	—	13 10	—	1 7
10	Enniskillen	5 17/6	32/- to 35/-	34/-	14 0	13 10	12 10	*1 15	1 16
13	Limavady	—	34/- to 41/-	33/9	16 0	15 0	14 10	†1 10	—
14	Dungiven	—	34/- to 40/-	33/-	—	12 0	—	—	1 6
15	Lisnakea	5 3	30/- to 35/-	33/6	15 10	15 0	—	—	1 11/6
16	Ballynahinch	—	38/- to 40/-	—	18 10	—	17 0	—	2 0
18	Portadown	6 3	35/- to 38/-	37/-	17 0	16 0	17 0	—	1 15
20	Camlough	6 0	36/- to 41/-	35/-	17 10	16 0	14 0	—	—
21	Money more	7 3	35/- to 42/-	35/-	15 10	14 15	14 10	—	—
22	Fintona	7 0	37/- to 40/-	35/-	16 0	15 0	13 10	†1 9/6	—
23	Antrim	—	37/- to 40/-	35/-	19 10	18 0	—	†2 0	1 11
24	Castlederg	5 10	35/- to 37/-	34/6	14 10	14 10	13 10	—	1 4
24	Killylea	—	29/6 to 38/-	35/6	15 0	—	13 10	†1 3	1 7/6
25	Ballymena	6 7	27/- to 42/6	—	22 10	19 10	19 10	—	1 13

* Long Wool.

† Downs and Crossbred.

† Mountain.

SHIPMENTS OF LIVE STOCK.

Statement showing the Shipments of Live Stock from Northern Ireland Ports during the months of February, 1939, January, 1939, February, 1938; two months ended 28th February, 1939, and 28th February, 1938.

PORTS OF :—	CATTLE				SHEEP				PIGS			Horses		
	Fat	Stores	Milch Cows	Springers	Calves	Total	Fat	Stores	Lambs	Total	Fat		Stores	Total
Belfast	6,348	7,376	968	28	—	14,720	1,683	—	—	1,683	2,319	4	2,323	156
Larne	5	1,567	—	12	20	1,604	—	—	—	—	746	—	746	9
Londonderry ...	583	4,610	15	17	296	5,521	169	—	—	169	744	—	744	5
Newry	12	202	2	—	—	216	99	—	—	99	—	—	—	—
Total, February, 1939	6,948	13,755	985	57	316	22,061	1,951	—	—	1,951	3,809	4	3,813	170
Total, January, 1939 ...	7,866	11,840	1,257	60	229	21,252	4,843	—	—	4,843	4,955	—	4,955	103
Total, February, 1938	5,666	13,082	920	35	262	19,965	3,516	—	—	3,516	7,382	80	7,462	194
Total, Two months ended 28th February, 1939	14,814	25,595	2,242	117	545	43,313	6,794	—	—	6,794	8,764	4	8,768	273
Total, Two months ended 28th February, 1938	10,800	25,435	1,989	110	498	38,832	10,632	—	—	10,632	20,210	358	20,568	365

IMPORTS AND EXPORTS.

Table showing the Imports and Exports through Northern Ireland ports of certain Agricultural Products during the month ended 31st January, 1939, with comparative figures for the corresponding period in 1938. This information includes trade with Eire across the land boundary.

(These figures are supplied through the courtesy of the Ministry of Commerce, and are subject to revision).

Commodity	IMPORTS		EXPORTS	
	Month ended 31st January		Month ended 31st January	
	1939	1938	1939	1938
Bacon cwt.	3,579	2,915	32,134	29,176
Hams cwt.	1,035	1,204	11,810	11,190
Pork cwt.	221	306	2,824	1,860
Butter cwt.	15,229	13,270	88	201
Eggs gt. hds.	34,674	32,414	139,896	91,435
Oat Products (inc. Oatmeal) ... cwt.	1,818	2,138	6,056	7,565
Potatoes tons	174	271	*9,209	*26,723
Poultry cwt.	289	299	9,289	21,551
Grass Seeds cwt.	1,992	2,657	28,552	36,118
Cream galls.	—	—	26,904	†19,049

* These figures represent the quantities of potatoes inspected by the Ministry of Agriculture for shipment.

† These figures are compiled from the Monthly Trading Returns supplied by Creameries in Northern Ireland.

ACCOUNT OF TRADE AT FAIRS.

Supplies of store cattle at fairs held during February were larger than in January, but remained on the small side for the time of year. Demand on the whole was better than a month earlier, and a large percentage of the offerings changed hands. Good, large, forward stores in condition, and small stores in bloom, attracted the special attention of buyers, and fetched fully late rates. Good medium polly bullocks were also in demand, but rough

stores were hard to clear, and less money had to be accepted. Buyers showed no inclination to take risks, and bought only the best of the small stock for grazing, and the best of the large animals for shipment. Prices on the whole showed little fluctuation from the levels of January.

Fat cattle were not as numerous as in January. A fairly high standard of quality was maintained, and a very good volume of business was done. A good demand ruled generally, and at many centres the enquiry was brisk, and prices again finished rather higher on the month. Medium weight cattle of good finish again fetched top prices, but almost any animal of quality met a ready sale.

Dairy cattle were in larger supply, but of poor quality generally. The demand continued dull, and only a few good animals met a ready sale. Eventually the bulk of the supply was absorbed for less money. Good young cows suitable for the English trade were easily disposed of at remunerative rates. Second and third grade cattle were cheaper on the month.

Sheep and lambs were again in small supply. Quality was of a fairly high standard, and a good enquiry was experienced for fat stock at around January prices. Yearling lambs of good quality were again in best demand, and commanded higher prices.

Young pigs were in normal supply last month. Trade opened quietly, but as the month advanced the demand became brisk, and good clearances were effected at higher prices. Average prices for the month showed increases.

Brood sows were generally of fair quality. A moderate volume of business was done at firm rates. Yorks and York crosses were mostly in demand at from £8 to £9 10s. per head. The general price range for the month was from £5 to £10 10s., and occasionally up to £14 according to quality.

Table showing the numbers of Live Stock (1) exposed for sale, and (2) sold at 21 fairs in Northern Ireland during the months of February and January, 1939, and February, 1938.

Description of Live Stock.	February, 1939		January, 1939		February, 1938	
	Number exposed for sale	Number sold	Number exposed for sale	Number sold	Number exposed for sale	Number sold
Store Cattle ..	6,798	4,686	5,604	3,806	5,649	4,418
Fat Cattle ..	1,697	1,563	1,733	1,639	1,647	1,469
Dairy Cattle ..	1,174	833	1,008	707	994	808
Sheep	194	136	94	71	127	89
Lambs	267	173	340	235	143	96
Young Pigs ..	3,227	2,514	3,161	2,473	2,692	†2,214

11th March, 1939,

MINISTRY OF AGRICULTURE.

List of Leaflets and other Publications

AGRICULTURAL EDUCATION.

Leaflet

- No. 60 Advantages of Winter Agricultural Classes.
- Prospectus of Ulster Dairy School.
- Prospectus of North West School.
- Prospectus of Greenmount Agricultural and Horticultural College.
- Scholarships in Agricultural Science.
- Scholarships in Creamery Management.
- Scholarships in Horticulture.

Leaflet

CATTLE.

- No. 54 The Breeding and Rearing of Calves.
- " 5 The Dishorning of Calves.

Circular

- No. 5 Why Pay a Tax on the Horns of Cattle?

Leaflet

- No. 19 How to Feed Linseed.
- " 81 The Construction of Cow Houses.
- " 61 The Care and Management of Bulls.
- " 82 White Scour in Calves.
- " 70 Ringworm.
- " 80 Hoose or Husk in Farm Stock.
- " 13 Contagious Abortion in Cattle.
- " 41 Blackleg, Blackquarter or Quarterill.
- " 64 The Destruction of Warble Fly Maggots in Cattle.

Circular

- No. 13 The Ox-Warble Fly.
- Guide to the Live Stock Breeding Act (Northern Ireland), 1922.

Leaflet

DAIRYING.

- No. 16 The Feeding of Dairy Cows.
- " 42 The Purchase of Balanced Rations for Dairy Cows.
- " 36 Advantages of Milk Recording.
- " 39 The Production of Clean Milk.
- " 78 Graded Milk.
- " 77 Licensing of Milk Producers and Distributors.
- " 51 Butter-making on the Farm.
- " 14 Cheese-making on the Farm.

Leaflet

POULTRY AND EGGS.

- No. 20 The Hatching and Rearing of Chickens.
- " 2 Improvement of Farm Poultry.
- " 3 Feeding for Egg Production.
- " 21 The Uses and Advantages of Portable Poultry Houses.
- " 28 The Construction of a Laying House for Poultry.
- " 29 The Selection and Breeding of Laying Hens.
- " 83 The Care, Management and Feeding of Poultry Breeding Stock.
- " 46 Hints for Winter Egg Production.
- " 57 How to have Eggs of First Quality.
- " 56 Identification of Egg Supplies.
- " 27 How to Keep Eggs Clean.

Talk to Producers

- No. 39 Hints on the care and handling of Eggs for Market.

Leaflet

- No. 59 Bacillary White Diarrhoea. (Pullorum Disease.)
- " 52 Capes in Chickens.
- " 31 Coccidiosis in Poultry.
- " 43 Tuberculosis in Poultry.
- " 32 Roup of Poultry (Fowl Pox).
- " 18 Marketing of Dead Poultry.
- " 37 The Raising and Fattening of Turkeys.
- Report on Stormont Egg Laying Test.
- List of Accredited Poultry Farms in Northern Ireland.

Leaflet

PIGS.

- No. 45 The Breeding and Rearing of Pigs.
- " 35 The Fattening of Pigs.
- " 69 The Construction of Piggeries.
- " 75 Pig Production and the Pigs Marketing Scheme.

Producers

- No. 41 Feeding of Pigs in Relation to Bacon Quality.

Leaflet

SHEEP.

- No. 47 The Care and Management of Sheep.
- " 63 Sheep—Castration, Docking, Foot-Rot and Care of Feet.
- " 23 The Handling and Care of Wool.
- " 24 Fluke in Sheep.

Leaflet

HORSES.

- No. 25 The Rearing and Management of Young Horses.
- Register of Premium Stallions in Northern Ireland.

FARM CROPS.

- Lists of Growers of Certified Crops of Potatoes.

Leaflet

- No. 44 New Varieties of Farm Crops.
- " 7 Potato Trials.
- " 73 The Propagation and Maintenance of Healthy Stocks of Potatoes.
- " 50 Potato Blight.
- " 74 New Pure Strains of Flax.
- " 1 Flax Seed.
- " 22 Leather-jacket Grubs.

Circular

- No. 9 Smut in Oats.

Leaflet

- No. 84 Lime and Liming.
- " 40 The Laying down and Management of Temporary Pastures.

FRUIT, VEGETABLES AND BEES.

Leaflet

- No. 15 Suitable Varieties of Fruit.
- " 34 The Pruning of Apple Trees.
- " 9 The Renovation of Orchards.
- " 33 Spraying Calendar for Apple Orchards.
- " 10 Fruit Tree Pests—Capsid Bugs.
- " 11 Fruit Tree Pests—Aphides and Apple Sucker.
- " 12 Fruit Tree Pests—Caterpillars.
- " 79 The Picking and Storing of Apples.
- " 6 The Packing of Apples in Standard Boxes.
- " 65 The Packing of Apples in Barrels.
- " 49 American Gooseberry Mildew.
- " 68 The Cultivation of Strawberries.
- " 71 The Cultivation of Raspberries.
- " 67 The Cultivation of Vegetables.
- " 17 Home Bottling of Fruits and Vegetables.
- " 76 Acarine (Isle of Wight) Disease of Bees.
- Guide to the Marketing of Fruit Act.

Leaflet

FORESTRY.

- No. 62 The Production of Timber on the Farm.
- " 72 Tree Planting for Shelter and Ornament.
- " 85 The Growing of Trees.

Leaflet

WEEDS.

- No. 38 The Destruction of Charlock.
- " 55 Destruction of Ragwort or Benweed.

GENERAL.

Circular

- No. 8 Basic Slag.
- " 11 Fertilisers and Feeding Stuffs Act—General Summary.
- " 306 Fertilisers and Feeding Stuffs Act, 1926—Revision of Regulations.
- " 10 Purchase of Fertilisers and Feeding Stuffs.

Leaflet

- No. 66 Seed Testing Facilities for Traders.
- " 26 Ordnance Survey Maps for Farmers.

Any of the above publications may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

The following publications can be obtained from His Majesty's Stationery Office, 80 Chichester Street, Belfast, at the prices stated:—

- | | |
|--|-----------------|
| (1) The Annual Report of the Ministry of Agriculture for Northern Ireland. | Price, 2/6 net. |
| (2) Annual Report upon the Agricultural Statistics of Northern Ireland. | Price, 2/- net. |
| (3) The Journal of the Ministry of Agriculture for Northern Ireland. | Price, 2/6 net. |
| (4) The Agricultural Output of Northern Ireland, 1925. | Price, 2/6 net. |

